



SEQUENCE LISTING

<110> CUNNINGHAM JR., FRANCIS X.
SUN, ZAIREN

<120> GENES OF CAROTENOID BIOSYNTHESIS AND METABOLISM AND
METHODS OF USE THEREOF

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<140> 09/701,395

<141> 2001-09-25

<150> 09/088,724

<151> 1998-06-02

<150> 09/088,725

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<160> 62

<170> PatentIn Ver. 2.1

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 35 40 45
 Ser Arg Ala Glu Asp Arg Thr Asp His Met Arg Gly Ala Ser Thr Trp
 50 55 60
 Ala Gly Gly Gln Ser Gln Asp Glu Leu Met Leu Lys Asp Glu Cys Ile
 65 70 75 80
 Leu Val Asp Val Glu Asp Asn Ile Thr Gly His Ala Ser Lys Leu Glu
 85 90 95
 Cys His Lys Phe Leu Pro His Gln Pro Ala Gly Leu Leu His Arg Ala
 100 105 110

Phe Ser Val Phe Leu Phe Asp Asp Gln Gly Arg Leu Leu Leu Gln Gln
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 Arg Ala Arg Ser Lys Ile Thr Phe Pro Ser Val Trp Thr Asn Thr Cys
 130 135 140
 Cys Ser His Pro Leu His Gly Gln Thr Pro Asp Glu Val Asp Gln Leu
 145 150 155 160
 Ser Gln Val Ala Asp Gly Thr Val Pro Gly Ala Lys Ala Ala Ala Ile
 165 170 175
 Arg Lys Leu Glu His Glu Leu Gly Ile Pro Ala His Gln Leu Pro Ala
 180 185 190
 Ser Ala Phe Arg Phe Leu Thr Arg Leu His Tyr Cys Ala Ala Asp Val
 195 200 205
 Gln Pro Ala Ala Thr Gln Ser Ala Leu Trp Gly Glu His Glu Met Asp
 210 215 220
 Tyr Ile Leu Phe Ile Arg Ala Asn Val Thr Leu Ala Pro Asn Pro Asp
 225 230 235 240
 Glu Val Asp Glu Val Arg Tyr Val Thr Gln Glu Glu Leu Arg Gln Met
 245 250 255
 Met Gln Pro Asp Asn Gly Leu Gln Trp Ser Pro Trp Phe Arg Ile Ile
 260 265 270
 Ala Ala Arg Phe Leu Glu Arg Trp Trp Ala Asp Leu Asp Ala Ala Leu
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 Ala
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 Ala Ser Thr Trp Ala Gly Gly Gln Ser Gln Asp Glu Leu Met Leu Lys
 50 55 60

Asp Glu Cys Ile Leu Val Asp Val Glu Asp Asn Ile Thr Gly His Ala
 65 70 75 80
 Ser Lys Leu Glu Cys His Lys Phe Leu Pro His Gln Pro Ala Gly Leu
 85 90 95
 Leu His Arg Ala Phe Ser Val Phe Leu Phe Asp Asp Gln Gly Arg Leu
 100 105 110
 Leu Leu Gln Gln Arg Ala Arg Ser Lys Ile Thr Phe Pro Ser Val Trp
 115 120 125
 Thr Asn Thr Cys Cys Ser His Pro Leu His Gly Gln Thr Pro Asp Glu
 130 135 140
 Val Asp Gln Leu Ser Gln Val Ala Asp Gly Thr Val Pro Gly Ala Lys
 145 150 155 160
 Ala Ala Ala Ile Arg Lys Leu Glu His Glu Leu Gly Ile Pro Ala His
 165 170 175
 Gln Leu Pro Ala Ser Ala Phe Arg Phe Leu Thr Arg Leu His Tyr Cys
 180 185 190
 Ala Ala Asp Val Gln Pro Ala Ala Thr Gln Ser Ala Leu Trp Gly Glu
 195 200 205
 His Glu Met Asp Tyr Ile Leu Phe Ile Arg Ala Asn Val Thr Leu Ala
 210 215 220
 Pro Asn Pro Asp Glu Val Asp Glu Val Arg Tyr Val Thr Gln Glu Glu
 225 230 235 240
 Leu Arg Gln Met Met Gln Pro Asp Asn Gly Leu Gln Trp Ser Pro Trp
 245 250 255
 Phe Arg Ile Ile Ala Ala Arg Phe Leu Glu Arg Trp Trp Ala Asp Leu
 260 265 270
 Asp Ala Ala Leu Asn Thr Asp Lys His Glu Asp Trp Gly Thr Val His
 275 280 285
 His Ile Asn Glu Ala
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 Gly Thr Ala Met Thr Asp Thr Lys Asp Ala Gly Met Asp Ala Val Gln
 50 55 60
 Arg Arg Leu Met Phe Glu Asp Glu Cys Ile Leu Val Asp Glu Thr Asp
 65 70 75 80
 Arg Val Val Gly His Val Ser Lys Tyr Asn Cys His Leu Met Glu Asn
 85 90 95
 Ile Glu Ala Lys Asn Leu Leu His Arg Ala Phe Ser Val Phe Leu Phe
 100 105 110
 Asn Ser Lys Tyr Glu Leu Leu Leu Gln Gln Arg Ser Asn Thr Lys Val
 115 120 125
 Thr Phe Pro Leu Val Trp Thr Asn Thr Cys Cys Ser His Pro Leu Tyr
 130 135 140
 Arg Glu Ser Glu Leu Ile Gln Asp Asn Ala Leu Gly Val Arg Asn Ala
 145 150 155 160
 Ala Gln Arg Lys Leu Leu Asp Glu Leu Gly Ile Val Ala Glu Asp Val
 165 170 175
 Pro Val Asp Glu Phe Thr Pro Leu Gly Arg Met Leu Tyr Lys Ala Pro
 180 185 190
 Ser Asp Gly Lys Trp Gly Glu His Glu Leu Asp Tyr Leu Leu Phe Ile
 195 200 205
 Val Arg Asp Val Lys Val Gln Pro Asn Pro Asp Glu Val Ala Glu Ile
 210 215 220
 Lys Tyr Val Ser Arg Glu Glu Leu Lys Glu Leu Val Lys Lys Ala Asp
 225 230 235 240
 Ala Gly Glu Glu Gly Leu Lys Leu Ser Pro Trp Phe Arg Leu Val Val
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 Asp Asn Phe Leu Met Lys Trp Trp Asp His Val Glu Lys Gly Thr Leu
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 35 40 45
 Ser Ser Gln Ala Thr Thr Met Gly Glu Val Val Asp Ala Gly Met Asp
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 Ala Val Gln Arg Arg Leu Met Phe Glu Asp Glu Cys Ile Leu Val Asp
 65 70 75 80
 Glu Asn Asp Lys Val Val Gly His Glu Ser Lys Tyr Asn Cys His Leu
 85 90 95
 Met Glu Lys Ile Glu Ser Glu Asn Leu Leu His Arg Ala Phe Ser Val
 100 105 110
 Phe Leu Phe Asn Ser Lys Tyr Glu Leu Leu Leu Gln Gln Arg Ser Ala
 115 120 125
 Thr Lys Val Thr Phe Pro Leu Val Trp Thr Asn Thr Cys Cys Ser His
 130 135 140
 Pro Leu Tyr Arg Glu Ser Glu Leu Ile Asp Glu Asn Cys Leu Gly Val
 145 150 155 160
 Arg Asn Ala Ala Gln Arg Lys Leu Leu Asp Glu Leu Gly Ile Pro Ala
 165 170 175
 Glu Asp Leu Pro Val Asp Gln Phe Ile Pro Leu Ser Arg Ile Leu Tyr
 180 185 190
 Lys Ala Pro Ser Asp Gly Lys Trp Gly Glu His Glu Leu Asp Tyr Leu
 195 200 205
 Leu Phe Ile Ile Arg Asp Val Asn Leu Asp Pro Asn Pro Asp Glu Val
 210 215 220
 Ala Glu Val Lys Tyr Met Asn Arg Asp Asp Leu Lys Glu Leu Leu Arg
 225 230 235 240
 Lys Ala Asp Ala Glu Glu Glu Gly Val Lys Leu Ser Pro Trp Phe Arg
 245 250 255
 Leu Val Val Asp Asn Phe Leu Phe Lys Trp Trp Asp His Val Glu Lys
 260 265 270
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 275 280 285

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 35 40 45
 Glu Cys Ile Leu Val Asp Glu Asn Asn Arg Val Val Gly His Asp Thr
 50 55 60
 Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Ala Glu Asn Leu Leu
 65 70 75 80
 His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys Tyr Glu Leu Leu
 85 90 95
 Leu Gln Gln Arg Ser Lys Thr Lys Val Thr Phe Pro Leu Val Trp Thr
 100 105 110
 Asn Thr Cys Cys Ser His Pro Leu Tyr Arg Glu Ser Glu Leu Ile Glu
 115 120 125
 Glu Asn Val Leu Gly Val Arg Asn Ala Ala Gln Arg Lys Leu Phe Asp
 130 135 140
 Glu Leu Gly Ile Val Ala Glu Asp Val Pro Val Asp Glu Phe Thr Pro
 145 150 155 160
 Leu Gly Arg Met Leu Tyr Lys Ala Pro Ser Asp Gly Lys Trp Gly Glu
 165 170 175
 His Glu Val Asp Tyr Leu Leu Phe Ile Val Arg Asp Val Lys Leu Gln
 180 185 190
 Pro Asn Pro Asp Glu Val Ala Glu Ile Lys Tyr Val Ser Arg Glu Glu
 195 200 205
 Leu Lys Glu Leu Val Lys Lys Ala Asp Ala Gly Asp Glu Ala Val Lys
 210 215 220
 Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe Leu Met Lys Trp
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 Thr Ile His Lys Leu
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Glu	Gln	Ile	Lys	Leu	Met	Asn	Glu	Asn	Cys	Ile	Val	Leu	Asp	Trp	Asp
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Asp	Asn	Ala	Ile	Gly	Ala	Gly	Thr	Lys	Lys	Val	Cys	His	Leu	Met	Glu
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Asn	Ile	Glu	Lys	Gly	Leu	Leu	His	Arg	Ala	Phe	Ser	Val	Phe	Ile	Phe
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Asn	Glu	Gln	Gly	Glu	Leu	Leu	Leu	Gln	Gln	Arg	Ala	Thr	Glu	Lys	Ile
		115					120						125		
Thr	Phe	Pro	Asp	Leu	Trp	Thr	Asn	Thr	Cys	Cys	Ser	His	Pro	Leu	Cys
	130					135					140				
Ile	Asp	Asp	Glu	Leu	Gly	Leu	Lys	Gly	Lys	Leu	Asp	Asp	Lys	Ile	Lys
145					150					155					160
Gly	Ala	Ile	Thr	Ala	Ala	Val	Arg	Lys	Leu	Asp	His	Glu	Leu	Gly	Ile
				165					170					175	
Pro	Glu	Asp	Glu	Thr	Lys	Thr	Arg	Gly	Lys	Phe	His	Phe	Leu	Asn	Arg
			180					185					190		
Ile	His	Tyr	Met	Ala	Pro	Ser	Asn	Glu	Pro	Trp	Gly	Glu	His	Glu	Ile
		195					200					205			
Asp	Tyr	Ile	Leu	Phe	Tyr	Lys	Ile	Asn	Ala	Lys	Glu	Asn	Leu	Thr	Val
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225					230					235					240
Asp	Leu	Lys	Thr	Met	Phe	Ala	Asp	Pro	Ser	Tyr	Lys	Phe	Thr	Pro	Trp
				245					250					255	
Phe	Lys	Ile	Ile	Cys	Glu	Asn	Tyr	Leu	Phe	Asn	Trp	Trp	Glu	Gln	Leu
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Asp	Asp	Leu	Ser	Glu	Val	Glu	Asn	Asp	Arg	Gln	Ile	His	Arg	Met	Leu
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<223> Variable amino acid, preferably Pro

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<222> (446)
<223> Variable amino acid, preferably Ala

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<222> (448)
<223> Variable amino acid, preferably Arg

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<222> (459)
<223> Variable amino acid, preferably Phe

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<223> Variable amino acid, preferably Ile

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<222> (473)
<223> Variable amino acid, preferably His

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<222> (480)
<223> Variable amino acid

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<222> (488)
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<220>
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 Xaa Xaa Xaa Xaa Gly Xaa Xaa Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Val Xaa Xaa Xaa Ser Xaa Ala Leu Leu Xaa Leu Val Pro
 50 55 60
 Glu Thr Lys Lys Lys Asn Leu Asp Phe Glu Leu Pro Xaa Tyr Asp Xaa
 65 70 75 80
 Ser Lys Xaa Xaa Val Val Asp Leu Ala Xaa Val Gly Gly Gly Pro Ala
 85 90 95
 Gly Leu Ala Val Ala Gln Gln Val Ser Glu Ala Gly Leu Ser Val Xaa
 100 105 110
 Ser Ile Asp Xaa Xaa Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val
 115 120 125
 Trp Val Asp Glu Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Xaa
 130 135 140
 Thr Trp Ser Gly Xaa Xaa Val Tyr Xaa Asp Xaa Xaa Xaa Xaa Lys Asp
 145 150 155 160
 Leu Xaa Arg Pro Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys
 165 170 175

Met Xaa Gln Lys Cys Ile Xaa Asn Gly Val Lys Phe His Xaa Xaa Lys
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 Val Xaa Xaa Val Xaa His Glu Glu Xaa Xaa Ser Xaa Xaa Cys Xaa
 195 200 205
 Asp Gly Xaa Xaa Ile Gln Ala Xaa Val Val Leu Asp Ala Thr Gly Phe
 210 215 220
 Ser Arg Xaa Leu Val Gln Tyr Asp Lys Pro Tyr Xaa Pro Gly Tyr Gln
 225 230 235 240
 Val Ala Tyr Gly Ile Leu Ala Glu Val Xaa Xaa His Pro Phe Asp Xaa
 245 250 255
 Xaa Lys Met Val Xaa Met Asp Trp Arg Asp Xaa His Leu Xaa Asn Asn
 260 265 270
 Xaa Xaa Leu Lys Glu Arg Asn Xaa Xaa Xaa Pro Thr Phe Leu Tyr Ala
 275 280 285
 Met Pro Phe Ser Ser Asn Xaa Ile Phe Leu Glu Glu Thr Ser Leu Val
 290 295 300
 Ala Arg Pro Gly Leu Xaa Xaa Xaa Asp Ile Gln Glu Arg Met Xaa Ala
 305 310 315 320
 Arg Leu Xaa His Leu Gly Ile Xaa Val Lys Xaa Ile Glu Glu Asp Glu
 325 330 335
 Xaa Cys Xaa Ile Pro Met Gly Gly Xaa Leu Pro Val Xaa Pro Gln Arg
 340 345 350
 Val Val Gly Xaa Gly Gly Thr Ala Gly Xaa Val His Pro Ser Thr Gly
 355 360 365
 Tyr Met Val Ala Arg Thr Leu Ala Ala Ala Pro Xaa Val Ala Asn Ala
 370 375 380
 Ile Xaa Xaa Tyr Leu Xaa Ser Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Leu
 385 390 395 400
 Ser Xaa Xaa Val Trp Xaa Asp Leu Trp Pro Ile Glu Arg Arg Arg Gln
 405 410 415
 Arg Glu Phe Phe Cys Phe Gly Met Asp Ile Leu Leu Lys Leu Asp Leu
 420 425 430
 Xaa Ala Thr Arg Arg Phe Phe Asp Ala Phe Phe Asp Leu Xaa Pro Xaa
 435 440 445
 Tyr Trp His Gly Phe Leu Ser Ser Arg Leu Xaa Leu Pro Glu Leu Xaa
 450 455 460
 Xaa Phe Gly Leu Ser Leu Phe Ser Xaa Ala Ser Asn Thr Ser Arg Xaa
 465 470 475 480

Tyr Leu Ser Ser Lys Val Asp Ser Ile Thr Glu Ala Ser Asp Gly Leu
 210 215 220
 Arg Leu Val Ala Cys Asp Asp Asn Asn Val Ile Pro Cys Arg Leu Ala
 225 230 235 240
 Thr Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Gln Tyr Glu Val
 245 250 255
 Gly Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu
 260 265 270
 Val Glu Asn Ser Pro Tyr Asp Pro Asp Gln Met Val Phe Met Asp Tyr
 275 280 285
 Arg Asp Tyr Thr Asn Glu Lys Val Arg Ser Leu Glu Ala Glu Tyr Pro
 290 295 300
 Thr Phe Leu Tyr Ala Met Pro Met Thr Lys Ser Arg Leu Phe Phe Glu
 305 310 315 320
 Xaa Thr Cys Leu Ala Ser Lys Asp Val Met Pro Phe Asp Leu Leu Lys
 325 330 335
 Thr Lys Leu Met Leu Arg Leu Asp Thr Leu Gly Ile Arg Ile Leu Lys
 340 345 350
 Thr Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro
 355 360 365
 Asn Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val
 370 375 380
 His Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro
 385 390 395 400
 Lys Tyr Ala Ser Val Ile Ala Glu Ile Leu Arg Glu Glu Thr Thr Lys
 405 410 415
 Gln Ile Asn Ser Asn Ile Ser Arg Gln Ala Trp Asp Thr Leu Trp Pro
 420 425 430
 Pro Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu Phe Gly Leu Ala Leu
 435 440 445
 Ile Val Gln Phe Asp Thr Glu Gly Ile Arg Ser Phe Phe Arg Thr Phe
 450 455 460
 Phe Arg Leu Pro Lys Trp Met Trp Gln Gly Phe Leu Gly Ser Thr Leu
 465 470 475 480
 Thr Ser Gly Asp Leu Val Leu Phe Ala Leu Tyr Met Phe Val Ile Ser
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 Pro Asn Asn Leu Arg Lys Gly Leu Ile Asn His Leu Ile Ser Asp Pro
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Thr Gly Ala Thr Met Ile Lys Thr Tyr Leu Lys Val
515 520

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<212> DNA
<213> Adonis palaestina

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tagtagttca aaactagctt ataacataca tcgatatggt tcttcttgta gagtagattt 240
tcaagtgaga gctgatgggt gaagcgggag tagaagttct gttgcttata aagagggttt 300
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tggaagaatcc gtgatggact tggttgtaat aggttggtga cctgctggtc tttcactggc 480
tgcagaagct gctaagctag ggttgaaagt tggccttatt ggtcctgac ttccttttac 540
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gcatgcttgg aaggacacca tcgtatatct tgataatgat gctcctgtcc ttattggctc 660
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<210> 23
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<212> PRT
<213> Adonis palaestina

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His Arg Tyr Gly Ser Ser Cys Arg Val Asp Phe Gln Val Arg Ala Asp
35 40 45

Gly Gly Ser Gly Ser Arg Ser Ser Val Ala Tyr Lys Glu Gly Phe Val
 50 55 60
 Asp Glu Glu Asp Phe Ile Lys Ala Gly Gly Ser Glu Leu Leu Phe Val
 65 70 75 80
 Gln Met Gln Gln Thr Lys Ser Met Glu Lys Gln Ala Lys Leu Ala Asp
 85 90 95
 Lys Leu Pro Pro Ile Pro Phe Gly Glu Ser Val Met Asp Leu Val Val
 100 105 110
 Ile Gly Cys Gly Pro Ala Gly Leu Ser Leu Ala Ala Glu Ala Ala Lys
 115 120 125
 Leu Gly Leu Lys Val Gly Leu Ile Gly Pro Asp Leu Pro Phe Thr Asn
 130 135 140
 Asn Tyr Gly Val Trp Glu Asp Glu Phe Lys Asp Leu Gly Leu Glu Arg
 145 150 155 160
 Cys Ile Glu His Ala Trp Lys Asp Thr Ile Val Tyr Leu Asp Asn Asp
 165 170 175
 Ala Pro Val Leu Ile Gly Arg Ala Tyr Gly Arg Val Ser Arg His Leu
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 Leu His Glu Glu Leu Leu Lys Arg Cys Val Glu Ser Gly Val Ser Tyr
 195 200 205
 Leu Asp Ser Lys Val Glu Arg Ile Thr Glu Ala Gly Asp Gly His Ser
 210 215 220
 Leu Val Val Cys Glu Asn Glu Ile Phe Ile Pro Cys Arg Leu Ala Thr
 225 230 235 240
 Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Glu Tyr Glu Val Gly
 245 250 255
 Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu Val
 260 265 270
 Glu Asn Asn Pro Tyr Asp Pro Asn Leu Met Val Phe Met Asp Tyr Arg
 275 280 285
 Asp Tyr Met Gln Gln Lys Leu Gln Cys Ser Glu Glu Glu Tyr Pro Thr
 290 295 300
 Phe Leu Tyr Val Met Pro Met Ser Pro Thr Arg Leu Phe Phe Glu Glu
 305 310 315 320
 Thr Cys Leu Ala Ser Lys Asp Ala Met Pro Phe Asp Leu Leu Lys Arg
 325 330 335
 Lys Leu Met Ser Arg Leu Lys Thr Leu Gly Ile Gln Val Thr Lys Val
 340 345 350

Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn
 355 360 365
 Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val His
 370 375 380
 Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys
 385 390 395 400
 Tyr Ala Ser Val Ile Ala Lys Ile Leu Lys Gln Asp Asn Ser Ala Tyr
 405 410 415
 Val Val Ser Gly Gln Ser Ser Ala Val Asn Ile Ser Met Gln Ala Trp
 420 425 430
 Ser Ser Leu Trp Pro Lys Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu
 435 440 445
 Phe Gly Leu Glu Leu Ile Val Gln Leu Asp Ile Glu Ala Thr Arg Thr
 450 455 460
 Phe Phe Arg Thr Phe Phe Arg Leu Pro Thr Trp Met Trp Trp Gly Phe
 465 470 475 480
 Leu Gly Ser Ser Leu Ser Ser Phe Asp Leu Val Leu Phe Ser Met Tyr
 485 490 495
 Met Phe Val Leu Ala Pro Asn Ser Met Arg Met Ser Leu Val Arg His
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Arg

<210> 24
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 <212> DNA
 <213> Solanum tuberosum

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<221> modified_base

<222> (1330)

<223> a, t, c, g, unknown or other

<400> 24

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attgcttgaa taagttgcac agtttcagtt tttgtatctg cttctttttt gtccaagatc 1320
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<210> 25

<211> 378

<212> PRT

<213> Solanum tuberosum

<220>

<221> MOD_RES

<222> (336)

<223> Variable amino acid

<400> 25

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Arg Ala Tyr Gly Arg Val Ser Arg His Leu Leu His Glu Glu Leu Leu
      35             40             45

Lys Arg Cys Val Glu Ala Gly Val Leu Tyr Leu Asn Ser Lys Val Asp
      50             55             60

Arg Ile Val Glu Ala Thr Asn Gly His Ser Leu Val Glu Cys Glu Gly
      65             70             75             80

Asp Val Val Ile Pro Cys Arg Phe Val Thr Val Ala Ser Gly Ala Ala
      85             90             95

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Ser Gly Lys Phe Leu Gln Tyr Glu Leu Gly Gly Pro Arg Val Ser Val
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 Gln Thr Ala Tyr Gly Val Glu Val Glu Val Asp Asn Asn Pro Phe Asp
 115 120 125
 Pro Ser Leu Met Val Phe Met Asp Tyr Arg Asp Tyr Val Arg His Asp
 130 135 140
 Ala Gln Ser Leu Glu Ala Lys Tyr Pro Thr Phe Leu Tyr Ala Met Pro
 145 150 155 160
 Met Ser Pro Thr Arg Val Phe Phe Glu Glu Thr Cys Leu Ala Ser Lys
 165 170 175
 Asp Ala Met Pro Phe Asp Leu Leu Lys Lys Lys Leu Met Leu Arg Leu
 180 185 190
 Asn Thr Leu Gly Val Arg Ile Lys Glu Ile Tyr Glu Glu Glu Trp Ser
 195 200 205
 Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn Thr Glu Gln Lys Thr Leu
 210 215 220
 Ala Phe Gly Ala Ala Ala Ser Met Val His Pro Ala Thr Gly Tyr Ser
 225 230 235 240
 Val Val Arg Ser Leu Ser Glu Ala Pro Lys Cys Ala Phe Val Leu Ala
 245 250 255
 Asn Ile Leu Arg Gln Asn His Ser Lys Asn Met Leu Thr Ser Ser Ser
 260 265 270
 Thr Pro Ser Ile Ser Thr Gln Ala Trp Asn Thr Leu Trp Pro Gln Glu
 275 280 285
 Arg Lys Arg Gln Arg Ser Phe Phe Leu Phe Gly Leu Ala Leu Ile Leu
 290 295 300
 Gln Leu Asp Ile Glu Gly Ile Arg Ser Phe Phe Arg Ala Phe Phe Arg
 305 310 315 320
 Val Pro Lys Trp Met Trp Gln Gly Phe Leu Gly Ser Ser Leu Ser Xaa
 325 330 335
 Ala Asp Leu Met Leu Phe Ala Phe Tyr Met Phe Ile Ile Ala Pro Asn
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<210> 26
 <211> 533

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Chimeric
lettuce/potato

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<221> MOD_RES

<222> (491)

<223> Variable amino acid

<400> 26

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Leu	Lys	Gly	Arg	Arg	Phe	Thr	Asn	Leu	Ser	Ala	Ser	Ser	Ser	Leu	Arg	35	40	45	
Gln	Ile	Lys	Cys	Ser	Ala	Lys	Ser	Asp	Arg	Cys	Val	Val	Asp	Lys	Gln	50	55	60	
Gly	Ile	Ser	Val	Ala	Asp	Glu	Glu	Asp	Tyr	Val	Lys	Ala	Gly	Gly	Ser	65	70	75	80
Glu	Leu	Phe	Phe	Val	Gln	Met	Gln	Arg	Thr	Lys	Ser	Met	Glu	Ser	Gln	85	90	95	
Ser	Lys	Leu	Ser	Glu	Lys	Leu	Ala	Gln	Ile	Pro	Ile	Gly	Asn	Cys	Ile	100	105	110	
Leu	Asp	Leu	Val	Val	Ile	Gly	Cys	Gly	Pro	Ala	Gly	Leu	Ala	Leu	Ala	115	120	125	
Ala	Glu	Ser	Ala	Lys	Leu	Gly	Leu	Asn	Val	Gly	Leu	Ile	Gly	Pro	Asp	130	135	140	
Leu	Pro	Phe	Thr	Asn	Asn	Tyr	Gly	Val	Trp	Gln	Asp	Glu	Phe	Ile	Gly	145	150	155	160
Leu	Gly	Leu	Glu	Gly	Cys	Ile	Glu	His	Ser	Trp	Lys	Asp	Thr	Leu	Val	165	170	175	
Tyr	Leu	Asp	Asp	Ala	Asp	Pro	Ile	Arg	Ile	Gly	Arg	Ala	Tyr	Gly	Arg	180	185	190	
Val	His	Arg	Asp	Leu	Leu	His	Glu	Glu	Leu	Leu	Arg	Arg	Cys	Val	Glu	195	200	205	
Ser	Gly	Val	Ser	Tyr	Leu	Ser	Ser	Lys	Val	Glu	Arg	Ile	Thr	Glu	Ala	210	215	220	
Pro	Asn	Gly	Tyr	Ser	Leu	Ile	Glu	Cys	Glu	Gly	Asn	Ile	Thr	Ile	Pro	225	230	235	240

Cys Arg Leu Ala Thr Val Ala Ser Gly Ala Ala Ser Gly Lys Phe Leu
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 Glu Tyr Glu Leu Gly Gly Pro Arg Val Ser Val Gln Thr Ala Tyr Gly
 260 265 270
 Val Glu Val Glu Val Asp Asn Asn Pro Phe Asp Pro Ser Leu Met Val
 275 280 285
 Phe Met Asp Tyr Arg Asp Tyr Val Arg His Asp Ala Gln Ser Leu Glu
 290 295 300
 Ala Lys Tyr Pro Thr Phe Leu Tyr Ala Met Pro Met Ser Pro Thr Arg
 305 310 315 320
 Val Phe Phe Glu Glu Thr Cys Leu Ala Ser Lys Asp Ala Met Pro Phe
 325 330 335
 Asp Leu Leu Lys Lys Lys Leu Met Leu Arg Leu Asn Thr Leu Gly Val
 340 345 350
 Arg Ile Lys Glu Ile Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly
 355 360 365
 Gly Ser Leu Pro Asn Thr Glu Gln Lys Thr Leu Ala Phe Gly Ala Ala
 370 375 380
 Ala Ser Met Val His Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu
 385 390 395 400
 Ser Glu Ala Pro Lys Cys Ala Phe Val Leu Ala Asn Ile Leu Arg Gln
 405 410 415
 Asn His Ser Lys Asn Met Leu Thr Ser Ser Ser Thr Pro Ser Ile Ser
 420 425 430
 Thr Gln Ala Trp Asn Thr Leu Trp Pro Gln Glu Arg Lys Arg Gln Arg
 435 440 445
 Ser Phe Phe Leu Phe Gly Leu Ala Leu Ile Leu Gln Leu Asp Ile Glu
 450 455 460
 Gly Ile Arg Ser Phe Phe Arg Ala Phe Phe Arg Val Pro Lys Trp Met
 465 470 475 480
 Trp Gln Gly Phe Leu Gly Ser Ser Leu Ser Xaa Ala Asp Leu Met Leu
 485 490 495
 Phe Ala Phe Tyr Met Phe Ile Ile Ala Pro Asn Asp Met Arg Arg Gly
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 Leu Ile Arg His Leu Leu Ser Asp Pro Thr Gly Ala Thr Leu Ile Arg
 515 520 525
 Thr Tyr Leu Thr Phe
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<210> 27
 <211> 374
 <212> PRT
 <213> Arabidopsis thaliana

<400> 27
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 35 40 45
 Leu Arg Arg Cys Val Glu Ser Gly Val Ser Tyr Leu Ser Ser Lys Val
 50 55 60
 Asp Ser Ile Thr Glu Ala Ser Asp Gly Leu Arg Leu Val Ala Cys Asp
 65 70 75 80
 Asp Asn Asn Val Ile Pro Cys Arg Leu Ala Thr Val Ala Ser Gly Ala
 85 90 95
 Ala Ser Gly Lys Leu Leu Gln Tyr Glu Val Gly Gly Pro Arg Val Cys
 100 105 110
 Val Gln Thr Ala Tyr Gly Val Glu Val Glu Val Glu Asn Ser Pro Tyr
 115 120 125
 Asp Pro Asp Gln Met Val Phe Met Asp Tyr Arg Asp Tyr Thr Asn Glu
 130 135 140
 Lys Val Arg Ser Leu Glu Ala Glu Tyr Pro Thr Phe Leu Tyr Ala Met
 145 150 155 160
 Pro Met Thr Lys Ser Arg Leu Phe Phe Glu Glu Thr Cys Leu Ala Ser
 165 170 175
 Lys Asp Val Met Pro Phe Asp Leu Leu Lys Thr Lys Leu Met Leu Arg
 180 185 190
 Leu Asp Thr Leu Gly Ile Arg Ile Leu Lys Thr Tyr Glu Glu Glu Trp
 195 200 205
 Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn Thr Glu Gln Lys Asn
 210 215 220
 Leu Ala Phe Gly Ala Ala Ala Ser Met Val His Pro Ala Thr Gly Tyr
 225 230 235 240
 Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys Tyr Ala Ser Val Ile
 245 250 255
 Ala Glu Ile Leu Arg Glu Glu Thr Thr Lys Gln Ile Asn Ser Asn Ile
 260 265 270

Ser Arg Gln Ala Trp Asp Thr Leu Trp Pro Pro Glu Arg Lys Arg Gln
 275 280 285
 Arg Ala Phe Phe Leu Phe Gly Leu Ala Leu Ile Val Gln Phe Asp Thr
 290 295 300
 Glu Gly Ile Arg Ser Phe Phe Arg Thr Phe Phe Arg Leu Pro Lys Trp
 305 310 315 320
 Met Trp Gln Gly Phe Leu Gly Ser Thr Leu Thr Ser Gly Asp Leu Val
 325 330 335
 Leu Phe Ala Leu Tyr Met Phe Val Ile Ser Pro Asn Asn Leu Arg Lys
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 Gly Leu Ile Asn His Leu Ile Ser Asp Pro Thr Gly Ala Thr Met Ile
 355 360 365
 Lys Thr Tyr Leu Lys Val
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<210> 28
 <211> 1002
 <212> DNA
 <213> Adonis palaestina

<400> 28
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 ggaatggatg ctgttcagaa gcggctcatg ttcgacgacg aatgtatttt ggtggatgag 180
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 aacgctgcac aaagaaagct tttagacgag ctaggcattc cagctgaaga tgtcccagtt 480
 gatgaattta ctctcttggg tcgcattctt tacaaagctc catctgacgg caaatgggga 540
 gagcacgaat tggactatct cctatttatt gtccgagatg tgaaatacga tccaaaccca 600
 gatgaagttg ctgatgctaa gtatgttaat cgcgaggagt tgagagagat actgagaaaa 660
 gctgatgctg gtgaagaggg actcaagttg tctccttggg ttagattggg tgttgataac 720
 tttttgttca agtgggtggga tcatgtagag cagggtacga ttaaggaagt tgctgacatg 780
 aaaactatcc acaagttgac ttaagaggac ttctctctc tgttctacta tttgtttttt 840
 gctacaataa gtgggtgggtg ataagcagtt tttctgtttt ctttaattta tggcttttga 900
 atttgccctg atgttgaact tgtaacatat ttagacaaat atgagacctt gtaagttgaa 960
 tttgaggctg aatttatatt tttgggaaca taataatgtt aa 1002

<210> 29
 <211> 1270
 <212> DNA
 <213> Adonis palaestina

<400> 29
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 taaaccagta attctcggtt ttaatttggt tcctaaatta ggccctttc cggaatcccc 180
 agaattatgt cgtcgatcag gattaatcct ttatatagta tcttctccac caccactaaa 240
 acattatcag cttcgtgttc ttctcccgtg gttcatcttc agcagcgttg tcgtactctt 300


```

tctattttctt cttccatcac taacagtcct cgccgagggg tgaatcgggt gttcgccctca 360
acgtcgacta tgggtgaagt cgctgatgct ggtatggatg ccgtccagaa gcggccttatg 420
ttcgcgatg aatgtatttt ggtggatgag aatgacaagg tcgtcggaca tgattccaaa 480
tacaactgtc atttgatgga aaagatagag gcagaaaact tgcttcacag agccttcagt 540
gttttcttat tcaactcaaa atacgagttg cttcttcagc aacgatctgc aacgaaggta 600
acattcccgc tcgtatggac aaacacctgt tgcagccatc cctcttccg tgattccgaa 660
ctcatagaag aaaattttct cgggggtacga aacgctgcac aaaggaagct tttagacgag 720
ctaggcattc cagctgaaga cgtaccagtt gatgaattca ctctcttgg tcgcattctt 780
tacaaagctc catctgacgg aaaatgggga gagcacgaac tggactatct tctgtttatt 840
gtccgagatg tgaaatacga tccaaaccca gatgaagttg ctgacgctaa gtacgttaat 900
cgcgaggagt tgaaagagat actgagaaaa gctgatgcag gtgaagaggg aataaagttg 960
tctccttggg ttagattggg tgtggataac tttttgttca agtgggtggg tcatgtagag 1020
gaggggaaga ttaaggacgt cgccgacatg aaaactatcc acaagttgac ttaagagaaa 1080
gtctcttaag ttctactatt tgggttttgc ttcaataagt ggatgggtgat gagcagtttt 1140
tatgcttctt ttaattttgg cttttcaatt tgctttatgt gttgaacttg taacatattt 1200
agtcaaatat gagaccttgt gagttgaatt tgaggttata tttatagttt tgggaacata 1260
aaaaaaaaaa                                     1270

```

<210> 30

<211> 1109

<212> DNA

<213> *Haematococcus pluvialis*

<400> 30

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acgcatatcc cgcgcgtgaa ctccgccag cagcccagct gtgcacacgc gcgactccag 120
tttaagctca ggagcatgca gctgcttgcc gaggaccgca cagaccacat gaggggtgca 180
agcactggg caggcgggca gtcgcaggat gagctgatgc tgaaggacga gtgcatctta 240
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aacacctgct gcagccaccc tctacatggg cagaccccag atgaggtgga ccaactaagc 480
caggtggccg acggcacagt acctggcgca aaagctgctg ccatccgcaa gttggagcac 540
gagctgggga taccagcgca ccagctgcc gcaagcgcgt ttcgcttctt cacgcgtttg 600
cactactgtg ccgcggacgt gcagccggt gcgacacaat cagcgctctg gggcgagcac 660
gagatggact acatcttatt catccgggcc aacgtcacct tggcgcccaa cctgacgag 720
gtggacgaag tcaggtacgt gacgcaagag gagctgcggc agatgatgca gccggacaac 780
gggttgcaat ggtcgccgtg gtttcgcat atcgccgcgc gtttcttga gcgttggtgg 840
gctgacctgg acgcggccct aaacactgac aaacacgagg attggggaac ggtgcatcac 900
atcaacgaag cgtgaaggca gaagctgcag gatgtgaaga cacgtcatgg ggtggaattg 960
cgtacttggc agcttcgtat ctctttttt tgagactgaa cctgcagagc tagagtcaat 1020
ggtgcatcat attcatcgtc tctcttttgt tttagactaa tctgtagcta gagtcaactg 1080
tgaatccttt acaactttca aaaaaaaaaa                                     1109

```

<210> 31

<211> 985

<212> DNA

<213> *Lactuca sativa*

<400> 31

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tgccaaaatg ttgaaatttc ccccttttaa aaccattgct accatgatct cttctccata 60
ttcttcttct ttgctgcctc ggaaatcttc tttccctcca atgccgtctc tcgcagccgc 120
tagtgttttc ctccaccctc tttcgtctgc cgctatgggc gattccagca tggatgctgt 180
ccagcgacgt ctcatgttcg atgacgaatg cattttggtg gatgagaatg acaagtggt 240
tggccatgat actaaataca attgtcattt gatggagaag attgaaaagg gaaatatgct 300
acacagagca ttcagtgtgt tcttgttcaa ctcgaaatat gaattactcc ttcagcaacg 360

```

```

ttctgcaacc aaggtgactt tccctttggt atggacaaac acgtgttgca gccatccact 420
atacagggag agtgagctta ttgacgaaaa cgcccttggg gtgaggaatg ctgcacagag 480
gaagctcctg gatgaactcg gcatccctgg agcagatgtt ccggttgatg agttcactcc 540
attgggtcgc attctataca aggccgcacg ggatggaaag tggggagAAC atgaacttga 600
ttacctgctg tttatggtac gtgatgttgg tttggatccg aaccagatg aagtgaaga 660
tgtaaaatat gtgaaccggg aagagctgaa ggaattggta aggaaggcgg atgctggtga 720
agaggggtgtg aagctgtccc cgtggttcaa attgattgtc gataatttct tgtttcagt 780
gtgggatcga ctccataagg gaaccctaac cgaagctatt gatatgaaa caatccacaa 840
actcacataa aaacactaca ctagtaggag agaggattat atgagatatt tgttatatgt 900
gaaattgaaa ttcagatgaa tgcttgattt tatttctatt tggacaaact tcaacttctt 960
tttgctacct tatcagaaaa aaaaaa

```

<210> 32
 <211> 988
 <212> DNA
 <213> *Lactuca sativa*

```

<400> 32
tattcgcttc aaaatctctt ccattaactg ctcaaacttc caccttcgcc ggtcttaatc 60
tccgccggcg cactttcacc accataaccg ccgccatggg tgacgattcc ggcattggacg 120
ctgtccagag acgtctcatg tttgatgatg aatgcatttt ggttgatgaa aatgacaatg 180
ttcttgggca tgataccaaa tacaattgtc acttgatgga gaagattgag aaagataatt 240
tgcttcatag agcattcagt gtatttttat tcaattcaaa atacgaatta ctcttcagc 300
aaaggtcaga aaccaagggtg acatttccct tggtatggac aaacacctgt tgcagccatc 360
cactatacag agaatcggag ttaattcccg aaaatgccct tggggtcaga aatgctgcac 420
agaggaagct tctagatgaa ctcggtatcc ctgctgaaga tgttccagtt gatgagttca 480
caacttttag tgcgatgttg tacaaggctc catctgatgg aaaatggggt gaacatgaag 540
ttgattacct actcttctc gtgctgacg ttgccgtgaa cccaaaccct gatgaggtgg 600
cggacattag atacgtgaac caagaagagt taaaagagtt actaaggaag gcggatgcgg 660
gtgaggaggg tttgaaattg tccccatggg ttaggctagt ggtggacaac ttcttgttca 720
aatggtggga tcatgtccaa aaggggacac tcaatgaagc aattgacatg aaaaccattc 780
ataagttgat atgaaaaatg gttaatattt atggtgggtg tttggagcta ataatttgtg 840
tgttcaagtc tcggtccttc tttttttaac gtttttttt tttcttttat tgggagtgtt 900
tattgtgtac ttgtaacgta ggccctttgg ttacgcttta agagtttaat aaagaaccac 960
cgtaatttta aaaaaaaaaa aaaaaaa

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<210> 33
 <211> 1874
 <212> DNA
 <213> *Chlamydomonas reinhardtii*

```

<400> 33
ggcacgagct cgagtttgtt ttaccatgac atcggggaatt tggagagcttg aactacctca 60
attactcaag taactcgcg caacacattt cgcgcgccat cgctgttttc tctgtctccag 120
ctaccgagca gcattgcttt agatcgcttt gatgtcataa actcccactt atatgagatc 180
cagtttcatc gagcccaagc ccagagcgca acctgtctta agccgcggca ggcgtccat 240
gcgcctcgcg caaagccgtg ctctcggtgc gcgtgtcagc tccgccctgt ggccgggagc 300
aggactttca caggtcAAA gcgttgcggt gcgaatggcg agttcgtcaa cctgggaagg 360
cacgggcctg agccaggatg acttcatgca gcgggacgag tgcttgggtg tggacgagca 420
ggaccggctg ctaggcaccg ccaacaagta cgactgccac cgcttcgagg cggccaaggg 480
ccagccctgc ggcgcctgc accgcgcctt ctccgtgttc ctgttcagcc ccgacggccg 540
actgctgctg cagcagcgcg cagccagcaa ggtgacgttc ccgggtgtgt ggaccaacac 600
ctgctgctcg caccgcgtgg cgggccaggc gccggacgag gtggacctgc cggcggcggt 660
agcctcgggc caggtgccgg gcatcaaggc ggccggcggt cgcaagctgc agcacgagct 720
ggggataccg ccggagcagg ttccgcctc ctcttctcc ttctcaccg gtctgcacta 780
ctgcgcggcc gacaccgcca cgcacggccc ggccggcgag tggggcgagc acgaggtgga 840

```

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ctacgtgctg ttcgtgcggc cgcagcagcc cgtcagcctg cagcccaacc cagacgaggt 900
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aggccgcagg ctgcagcacc cgttggggag gtgccacctg caggcgccgc gccggggcggg 1740
cctgagtaat gggcgccctga gtagtggcgg ccacaggagg cgcaggaggc agcagcagga 1800
ggacgagctg gagggaccgg ttggcaaccc aaggttgcgc gtgtaacata gtggccatac 1860
aaaaaaaaaa aaaa 1874

```

```

<210> 34
<211> 956
<212> DNA
<213> Tagetes erecta

```

```

<220>
<221> modified_base
<222> (565)
<223> a, t, c, g, unknown or other

```

```

<220>
<221> modified_base
<222> (569)
<223> a, t, c, g, unknown or other

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<400> 34
ccaaaaacaa ctcaaattct ctccgtcgct cttactccgc catgggtgac gactccggca 60
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acaatgtggt gggacatgat accaaatata attgtcactt gatggagaag attgaaacag 180
gtaaaatgct gcacagagca ttcagcgttt ttctattcaa ttcaaaatac gagttacttc 240
ttcagcaacg gtctgcaacc aaggtgacat ttcccttagt atggaccaac acctggttgc 300
gccatccact ctacagagaa tccgagcttg tccccgaaaa cgcccttggg gtaagaaatg 360
ctgcacagag gaagctgttg gatgaactcg gtatccctgc tgaagatgtt cccgttgatc 420
agtttactcc tttaggtcgc atgctctaca aggctccatc tgatggaaag tggggagaaac 480
atgaacttga ctacctactt ttcatagtga gagacgttgc tgtaaaccgg aaccagatg 540
aagtggcgga tatcaaatat gtganccang aagagttaaa ggagctgcta aggaaagcag 600
atgcggggga ggagggtttg aagctgtctc catgggttcag gttagtgggt gataacttct 660
tgttcaagtg gtgggatcat gtgcaaaagg gtacactcac tgaagcaatt gatatgaaaa 720
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ggttgggtcg ggtctacat caattgtttt tttcttttaa gaagttttta tctctatttg 840
agcatgttga ttcttgtctt ttgtgtgtaa gattttgggt ttcgtttcag ttgtaataat 900
gaaccattga tggtttgcaa tttcaagttc ctatcgacat gtagtgatct aaaaaa 956

```

```

<210> 35
<211> 1031
<212> DNA
<213> Oryza sativa

```

<400> 35

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cctccctttg cctcgcgcag aggcggcgcc gccttctccg ccgcgaggat ggccggcgcc 60
gccggcgccg tggaggacgc cgggatggac gaggtccaga agcggtccat gttcgacgac 120
gaatgcattt tggatgatga acaagacaat gttgttggcc atgaatcaaa atataactgc 180
catctgatgg aaaaaatcga atctgaaaat ctacttcata gggctttcag tgtattcctg 240
ttcaactcaa aatatgaact cctactccag caacgatctg caacaaaggt tacatttcct 300
ctagtttggg ccaacacttg ctgcagccat cctctgtacc gtgagtctga gcttatacag 360
gaaaactacc ttggtgtag aaatgctgct cagaggaagc tcttgatga gctgggcatc 420
ccagctgaag atgtgccagt tgaccaattc acccctcttg gtcggatgct ttacaaggcc 480
ccatctgatg gaaaatgggg tgaacacgag cttgactacc tgctgttcat cgtccgcgac 540
gtgaaggtag tcccgaaccc ggacgaagtg gccgatgtga aatacgtgag ccgtgagcag 600
ctgaaggagc tcatccgcaa agcggacgcc ggagaggaag gcctgaagct gtctccctgg 660
ttcgggctgg ttgttgacaa cttcctcatg ggctggtggg atcacgtcga gaaaggcacc 720
ctcaacgagg ccgtggacat ggagaccatc cacaagctga agtaaggact gcgatgttgt 780
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tgggctctgc tgactgagag attcccttat agagtgtcta tgtaaattta gcaaacttct 960
atattatata tgattagtta attgttcggt gtctgaataa agaacaatag catgttccat 1020
gtttatttgc t                                     1031

```

<210> 36

<211> 232

<212> PRT

<213> Tagetes erecta

<400> 36

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Met Gly Asp Asp Ser Gly Met Asp Ala Val Gln Arg Arg Leu Met Phe
 1              5              10              15

Asp Asp Glu Cys Ile Leu Val Asp Glu Cys Asp Asn Val Val Gly His
      20              25              30

Asp Thr Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Thr Gly Lys
      35              40              45

Met Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys Tyr Glu
      50              55              60

Leu Leu Leu Gln Gln Arg Ser Ala Thr Lys Val Thr Phe Pro Leu Val
      65              70              75              80

Trp Thr Asn Thr Cys Cys Ser His Pro Leu Tyr Arg Glu Ser Glu Leu
      85              90              95

Val Pro Glu Asn Ala Leu Gly Val Arg Asn Ala Ala Gln Arg Lys Leu
      100              105              110

Leu Asp Glu Leu Gly Ile Pro Ala Glu Asp Val Pro Val Asp Gln Phe
      115              120              125

Thr Pro Leu Gly Arg Met Leu Tyr Lys Ala Pro Ser Asp Gly Lys Trp
      130              135              140

Gly Glu His Glu Leu Asp Tyr Leu Leu Phe Ile Val Arg Asp Val Ala
      145              150              155              160

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Val Asn Pro Asn Pro Asp Glu Val Ala Asp Ile Lys Tyr Val Ser His
 165 170 175

Glu Glu Leu Lys Glu Leu Leu Arg Lys Ala Asp Ala Gly Glu Glu Gly
 180 185 190

Leu Lys Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe Leu Phe
 195 200 205

Lys Trp Trp Asp His Val Gln Lys Gly Thr Leu Thr Glu Ala Ile Asp
 210 215 220

Met Lys Thr Ile His Lys Leu Ile
 225 230

<210> 37

<211> 280

<212> PRT

<213> Lactuca sativa

<400> 37

Met Leu Lys Phe Pro Pro Phe Lys Thr Ile Ala Thr Met Ile Ser Ser
 1 5 10 15

Pro Tyr Ser Ser Phe Leu Leu Pro Arg Lys Ser Ser Phe Pro Pro Met
 20 25 30

Pro Ser Leu Ala Ala Ala Ser Val Phe Leu His Pro Leu Ser Ser Ala
 35 40 45

Ala Met Gly Asp Ser Ser Met Asp Ala Val Gln Arg Arg Leu Met Phe
 50 55 60

Asp Asp Glu Cys Ile Leu Val Asp Glu Asn Asp Lys Val Val Gly His
 65 70 75 80

Asp Thr Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Lys Gly Asn
 85 90 95

Met Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys Tyr Glu
 100 105 110

Leu Leu Leu Gln Gln Arg Ser Ala Thr Lys Val Thr Phe Pro Leu Val
 115 120 125

Trp Thr Asn Thr Cys Cys Ser His Pro Leu Tyr Arg Glu Ser Glu Leu
 130 135 140

Ile Asp Glu Asn Ala Leu Gly Val Arg Asn Ala Ala Gln Arg Lys Leu
 145 150 155 160

Leu Asp Glu Leu Gly Ile Pro Gly Ala Asp Val Pro Val Asp Glu Phe
 165 170 175

Thr Pro Leu Gly Arg Ile Leu Tyr Lys Ala Ala Ser Asp Gly Lys Trp
 180 185 190

Gly Glu His Glu Leu Asp Tyr Leu Leu Phe Met Val Arg Asp Val Gly
 195 200 205

Leu Asp Pro Asn Pro Asp Glu Val Lys Asp Val Lys Tyr Val Asn Arg
 210 215 220

Glu Glu Leu Lys Glu Leu Val Arg Lys Ala Asp Ala Gly Glu Glu Gly
 225 230 235 240

Val Lys Leu Ser Pro Trp Phe Lys Leu Ile Val Asp Asn Phe Leu Phe
 245 250 255

Gln Trp Trp Asp Arg Leu His Lys Gly Thr Leu Thr Glu Ala Ile Asp
 260 265 270

Met Lys Thr Ile His Lys Leu Thr
 275 280

<210> 38
 <211> 229
 <212> PRT
 <213> Adonis palaestina

<400> 38
 Met Gly Asp Asp Ser Gly Met Asp Ala Val Gln Arg Arg Leu Met Phe
 1 5 10 15

Asp Asp Glu Cys Ile Leu Val Asp Glu Asn Asp Asn Val Leu Gly His
 20 25 30

Asp Thr Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Lys Asp Asn
 35 40 45

Leu Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys Tyr Glu
 50 55 60

Leu Leu Leu Gln Gln Arg Ser Glu Thr Lys Val Thr Phe Pro Leu Val
 65 70 75 80

Trp Thr Asn Thr Cys Cys Ser His Pro Leu Tyr Arg Glu Ser Glu Leu
 85 90 95

Ile Pro Glu Asn Ala Leu Gly Val Arg Asn Ala Ala Gln Arg Lys Leu
 100 105 110

Leu Asp Glu Leu Gly Ile Pro Ala Glu Asp Val Pro Val Asp Glu Phe
 115 120 125

Thr Thr Leu Gly Arg Met Leu Tyr Lys Ala Pro Ser Asp Gly Lys Trp
 130 135 140

Gly Glu His Glu Val Asp Tyr Leu Leu Phe Leu Val Arg Asp Val Ala
 145 150 155 160

Val Asn Pro Asn Pro Asp Glu Val Ala Asp Ile Arg Tyr Val Asn Gln
 165 170 175

Glu Glu Leu Lys Glu Leu Leu Arg Lys Ala Asp Ala Gly Glu Glu Gly
180 185 190

Leu Lys Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe Leu Phe
195 200 205

Lys Trp Trp Asp His Val Gln Lys Gly Thr Leu Asn Glu Ala Ile Asp
210 215 220

Met Lys Thr Ile His
225

<210> 39

<211> 295

<212> PRT

<213> Adonis palaestina

<400> 39

Met Ser Ser Ile Arg Ile Asn Pro Leu Tyr Ser Ile Phe Ser Thr Thr
1 5 10 15

Thr Lys Thr Leu Ser Ala Ser Cys Ser Ser Pro Ala Val His Leu Gln
20 25 30

Gln Arg Cys Arg Thr Leu Ser Ile Ser Ser Ser Ile Thr Asn Ser Pro
35 40 45

Arg Arg Gly Leu Asn Arg Leu Phe Ala Ser Thr Ser Thr Met Gly Glu
50 55 60

Val Ala Asp Ala Gly Met Asp Ala Val Gln Lys Arg Leu Met Phe Asp
65 70 75 80

Asp Glu Cys Ile Leu Val Asp Glu Asn Asp Lys Val Val Gly Tyr Asp
85 90 95

Ser Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Ala Glu Asn Leu
100 105 110

Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys Tyr Glu Leu
115 120 125

Leu Leu Gln Gln Arg Ser Ala Thr Lys Val Thr Phe Pro Leu Val Trp
130 135 140

Thr Asn Thr Cys Cys Ser His Pro Leu Phe Arg Asp Ser Glu Leu Ile
145 150 155 160

Glu Glu Asn Phe Leu Gly Val Arg Asn Ala Ala Gln Arg Lys Leu Leu
165 170 175

Asp Glu Leu Gly Ile Pro Ala Glu Asp Val Pro Val Asp Glu Phe Thr
180 185 190

Pro Leu Gly Arg Ile Leu Tyr Lys Ala Pro Ser Asp Gly Lys Trp Gly
195 200 205

Glu His Glu Leu Asp Tyr Leu Leu Phe Ile Val Arg Asp Val Lys Tyr
 210 215 220
 Asp Pro Asn Pro Asp Glu Val Ala Asp Ala Lys Tyr Val Asn Arg Glu
 225 230 235 240
 Glu Leu Lys Glu Ile Leu Arg Lys Ala Asp Ala Gly Glu Glu Gly Ile
 245 250 255
 Lys Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe Leu Phe Lys
 260 265 270
 Trp Trp Asp His Val Glu Glu Gly Lys Ile Lys Asp Val Ala Asp Met
 275 280 285
 Lys Thr Ile His Lys Leu Thr
 290 295

<210> 40
 <211> 234
 <212> PRT
 <213> Adonis palaestina

<400> 40
 Met Gly Glu Val Thr Asp Ala Gly Met Asp Ala Val Gln Lys Arg Leu
 1 5 10 15
 Met Phe Asp Asp Glu Cys Ile Leu Val Asp Glu Asn Asp Lys Val Val
 20 25 30
 Gly His Asp Ser Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Ala
 35 40 45
 Glu Asn Leu Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys
 50 55 60
 Tyr Glu Leu Leu Leu Gln Gln Arg Ser Ala Thr Lys Val Thr Phe Pro
 65 70 75 80
 Leu Val Trp Thr Asn Thr Cys Cys Ser His Pro Leu Phe Arg Asp Ser
 85 90 95
 Glu Leu Ile Glu Glu Asn Tyr Leu Gly Val Arg Asn Ala Ala Gln Arg
 100 105 110
 Lys Leu Leu Asp Glu Leu Gly Ile Pro Ala Glu Asp Val Pro Val Asp
 115 120 125
 Glu Phe Thr Pro Leu Gly Arg Ile Leu Tyr Lys Ala Pro Ser Asp Gly
 130 135 140
 Lys Trp Gly Glu His Glu Leu Asp Tyr Leu Leu Phe Ile Val Arg Asp
 145 150 155 160
 Val Lys Tyr Asp Pro Asn Pro Asp Glu Val Ala Asp Ala Lys Tyr Val
 165 170 175

Asn Arg Glu Glu Leu Arg Glu Ile Leu Arg Lys Ala Asp Ala Gly Glu
 180 185 190

Glu Gly Leu Lys Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe
 195 200 205

Leu Phe Lys Trp Trp Asp His Val Glu Gln Gly Thr Ile Lys Glu Val
 210 215 220

Ala Asp Met Lys Thr Ile His Lys Leu Thr
 225 230

<210> 41

<211> 238

<212> PRT

<213> Oryza sativa

<400> 41

Met Ala Gly Ala Ala Ala Ala Val Glu Asp Ala Gly Met Asp Glu Val
 1 5 10 15

Gln Lys Arg Leu Met Phe Asp Asp Glu Cys Ile Leu Val Asp Glu Gln
 20 25 30

Asp Asn Val Val Gly His Glu Ser Lys Tyr Asn Cys His Leu Met Glu
 35 40 45

Lys Ile Glu Ser Glu Asn Leu Leu His Arg Ala Phe Ser Val Phe Leu
 50 55 60

Phe Asn Ser Lys Tyr Glu Leu Leu Leu Gln Gln Arg Ser Ala Thr Lys
 65 70 75 80

Val Thr Phe Pro Leu Val Trp Thr Asn Thr Cys Cys Ser His Pro Leu
 85 90 95

Tyr Arg Glu Ser Glu Leu Ile Gln Glu Asn Tyr Leu Gly Val Arg Asn
 100 105 110

Ala Ala Gln Arg Lys Leu Leu Asp Glu Leu Gly Ile Pro Ala Glu Asp
 115 120 125

Val Pro Val Asp Gln Phe Thr Pro Leu Gly Arg Met Leu Tyr Lys Ala
 130 135 140

Pro Ser Asp Gly Lys Trp Gly Glu His Glu Leu Asp Tyr Leu Leu Phe
 145 150 155 160

Ile Val Arg Asp Val Lys Val Val Pro Asn Pro Asp Glu Val Ala Asp
 165 170 175

Val Lys Tyr Val Ser Arg Glu Gln Leu Lys Glu Leu Ile Arg Lys Ala
 180 185 190

Asp Ala Gly Glu Glu Gly Leu Lys Leu Ser Pro Trp Phe Arg Leu Val
 195 200 205

Val Asp Asn Phe Leu Met Gly Trp Trp Asp His Val Glu Lys Gly Thr
 210 215 220

Leu Asn Glu Ala Val Asp Met Glu Thr Ile His Lys Leu Lys
 225 230 235

<210> 42

<211> 233

<212> PRT

<213> Arabidopsis thaliana

<400> 42

Met Thr Asp Ser Asn Asp Ala Gly Met Asp Ala Val Gln Arg Arg Leu
 1 5 10 15

Met Phe Glu Asp Glu Cys Ile Leu Val Asp Glu Asn Asn Arg Val Val
 20 25 30

Gly His Asp Thr Lys Tyr Asn Cys His Leu Met Glu Lys Ile Glu Ala
 35 40 45

Glu Asn Leu Leu His Arg Ala Phe Ser Val Phe Leu Phe Asn Ser Lys
 50 55 60

Tyr Glu Leu Leu Leu Gln Gln Arg Ser Lys Thr Lys Val Thr Phe Pro
 65 70 75 80

Leu Val Trp Thr Asn Thr Cys Cys Ser His Pro Leu Tyr Arg Glu Ser
 85 90 95

Glu Leu Ile Glu Glu Asn Val Leu Gly Val Arg Asn Ala Ala Gln Arg
 100 105 110

Lys Leu Phe Asp Glu Leu Gly Ile Val Ala Glu Asp Val Pro Val Asp
 115 120 125

Glu Phe Thr Pro Leu Gly Arg Met Leu Tyr Lys Ala Pro Ser Asp Gly
 130 135 140

Lys Trp Gly Glu His Glu Val Asp Tyr Leu Leu Phe Ile Val Arg Asp
 145 150 155 160

Val Lys Leu Gln Pro Asn Pro Asp Glu Val Ala Glu Ile Lys Tyr Val
 165 170 175

Ser Arg Glu Glu Leu Lys Glu Leu Val Lys Lys Ala Asp Ala Gly Asp
 180 185 190

Glu Ala Val Lys Leu Ser Pro Trp Phe Arg Leu Val Val Asp Asn Phe
 195 200 205

Leu Met Lys Trp Trp Asp His Val Glu Lys Gly Thr Ile Thr Glu Ala
 210 215 220

Ala Asp Met Lys Thr Ile His Lys Leu
 225 230

<210> 43

<211> 293

<212> PRT

<213> *Haematococcus pluvialis*

<400> 43

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Met Leu Arg Ser Leu Leu Arg Gly Leu Thr His Ile Pro Arg Val Asn
 1           5           10           15

Ser Ala Gln Gln Pro Ser Cys Ala His Ala Arg Leu Gln Phe Lys Leu
          20           25           30

Arg Ser Met Gln Leu Leu Ser Glu Asp Arg Thr Asp His Met Arg Gly
          35           40           45

Ala Ser Thr Trp Ala Gly Gly Gln Ser Gln Asp Glu Leu Met Leu Lys
 50           55           60

Asp Glu Cys Ile Leu Val Asp Val Glu Asp Asn Ile Thr Gly His Ala
 65           70           75           80

Ser Lys Leu Glu Cys His Lys Phe Leu Pro His Gln Pro Ala Gly Leu
          85           90           95

Leu His Arg Ala Phe Ser Val Phe Leu Phe Asp Asp Gln Gly Arg Leu
          100          105          110

Leu Leu Gln Gln Arg Ala Arg Ser Lys Ile Thr Phe Pro Ser Val Trp
          115          120          125

Thr Asn Thr Cys Cys Ser His Pro Leu His Gly Gln Thr Pro Asp Glu
          130          135          140

Val Asp Gln Leu Ser Gln Val Ala Asp Gly Thr Val Pro Gly Ala Lys
          145          150          155          160

Ala Ala Ala Ile Arg Lys Leu Glu His Glu Leu Gly Ile Pro Ala His
          165          170          175

Gln Leu Pro Ala Ser Ala Phe Arg Phe Leu Thr Arg Leu His Tyr Cys
          180          185          190

Ala Ala Asp Val Gln Pro Ala Ala Thr Gln Ser Ala Leu Trp Gly Glu
          195          200          205

His Glu Met Asp Tyr Ile Leu Phe Ile Arg Ala Asn Val Thr Leu Ala
          210          215          220

Pro Asn Pro Asp Glu Val Asp Glu Val Arg Tyr Val Thr Gln Glu Glu
          225          230          235          240

Leu Arg Gln Met Met Gln Pro Asp Asn Gly Leu Gln Trp Ser Pro Trp
          245          250          255

Phe Arg Ile Ile Ala Ala Arg Phe Leu Glu Arg Trp Trp Ala Asp Leu
          260          265          270

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Asp Ala Ala Leu Asn Thr Asp Lys His Glu Asp Trp Gly Thr Val His
 275 280 285

His Ile Asn Glu Ala
 290

<210> 44

<211> 305

<212> PRT

<213> Haematococcus pluvialis

<400> 44

Met Leu Arg Ser Leu Leu Arg Gly Leu Thr His Ile Pro Arg Val Asn
 1 5 10 15

Ser Ala Gln Gln Pro Ser Cys Ala His Ala Arg Leu Gln Phe Lys Leu
 20 25 30

Arg Ser Met Gln Met Thr Leu Met Gln Pro Ser Ile Ser Ala Asn Leu
 35 40 45

Ser Arg Ala Glu Asp Arg Thr Asp His Met Arg Gly Ala Ser Thr Trp
 50 55 60

Ala Gly Gly Gln Ser Gln Asp Glu Leu Met Leu Lys Asp Glu Cys Ile
 65 70 75 80

Leu Val Asp Val Glu Asp Asn Ile Thr Gly His Ala Ser Lys Leu Glu
 85 90 95

Cys His Lys Phe Leu Pro His Gln Pro Ala Gly Leu Leu His Arg Ala
 100 105 110

Phe Ser Val Phe Leu Phe Asp Asp Gln Gly Arg Leu Leu Leu Gln Gln
 115 120 125

Arg Ala Arg Ser Lys Ile Thr Phe Pro Ser Val Trp Thr Asn Thr Cys
 130 135 140

Cys Ser His Pro Leu His Gly Gln Thr Pro Asp Glu Val Asp Gln Leu
 145 150 155 160

Ser Gln Val Ala Asp Gly Thr Val Pro Gly Ala Lys Ala Ala Ala Ile
 165 170 175

Arg Lys Leu Glu His Glu Leu Gly Ile Pro Ala His Gln Leu Pro Ala
 180 185 190

Ser Ala Phe Arg Phe Leu Thr Arg Leu His Tyr Cys Ala Ala Asp Val
 195 200 205

Gln Pro Ala Ala Thr Gln Ser Ala Leu Trp Gly Glu His Glu Met Asp
 210 215 220

Tyr Ile Leu Phe Ile Arg Ala Asn Val Thr Leu Ala Pro Asn Pro Asp
 225 230 235 240

Glu Val Asp Glu Val Arg Tyr Val Thr Gln Glu Glu Leu Arg Gln Met
245 250 255

Met Gln Pro Asp Asn Gly Leu Gln Trp Ser Pro Trp Phe Arg Ile Ile
260 265 270

Ala Ala Arg Phe Leu Glu Arg Trp Trp Ala Asp Leu Asp Ala Ala Leu
275 280 285

Asn Thr Asp Lys His Glu Asp Trp Gly Thr Val His His Ile Asn Glu
290 295 300

Ala
305

<210> 45

<211> 307

<212> PRT

<213> Chlamydomonas reinhardtii

<400> 45

Met Arg Ser Ser Phe Ile Glu Pro Lys Pro Arg Ala Gln Pro Val Leu
1 5 10 15

Ser Arg Gly Arg Ala Ser Met Arg Leu Ala Gln Ser Arg Ala Leu Val
20 25 30

Ala Arg Val Ser Ser Ala Leu Trp Pro Gly Ala Gly Leu Ser Gln Ala
35 40 45

Gln Ser Val Ala Val Arg Met Ala Ser Ser Ser Thr Trp Glu Gly Thr
50 55 60

Gly Leu Ser Gln Asp Asp Phe Met Gln Arg Asp Glu Cys Leu Val Val
65 70 75 80

Asp Glu Gln Asp Arg Leu Leu Gly Thr Ala Asn Lys Tyr Asp Cys His
85 90 95

Arg Phe Glu Ala Ala Lys Gly Gln Pro Cys Gly Arg Leu His Arg Ala
100 105 110

Phe Ser Val Phe Leu Phe Ser Pro Asp Gly Arg Leu Leu Leu Gln Gln
115 120 125

Arg Ala Ala Ser Lys Val Thr Phe Pro Gly Val Trp Thr Asn Thr Cys
130 135 140

Cys Ser His Pro Leu Ala Gly Gln Ala Pro Asp Glu Val Asp Leu Pro
145 150 155 160

Ala Ala Val Ala Ser Gly Gln Val Pro Gly Ile Lys Ala Ala Ala Val
165 170 175

Arg Lys Leu Gln His Glu Leu Gly Ile Pro Pro Glu Gln Val Pro Ala
 180 185 190
 Ser Ser Phe Ser Phe Leu Thr Arg Leu His Tyr Cys Ala Ala Asp Thr
 195 200 205
 Ala Thr His Gly Pro Ala Ala Glu Trp Gly Glu His Glu Val Asp Tyr
 210 215 220
 Val Leu Phe Val Arg Pro Gln Gln Pro Val Ser Leu Gln Pro Asn Pro
 225 230 235 240
 Asp Glu Val Asp Ala Thr Arg Tyr Val Thr Leu Pro Glu Leu Gln Ser
 245 250 255
 Met Met Ala Asp Pro Gly Leu Ser Trp Ser Pro Trp Phe Arg Ile Leu
 260 265 270
 Ala Thr Gln Pro Ala Phe Leu Pro Ala Trp Trp Gly Asp Leu Lys Arg
 275 280 285
 Arg Trp Arg Pro Gly Gly Ser Arg Leu Ser Asp Trp Gly Thr Ile His
 290 295 300
 Arg Val Met
 305

<210> 46

<211> 1848

<212> DNA

<213> Adonis palaestina

<400> 46

gagagaaaaa gagtgttata ttaatgttac tgtcgcattc ttgcaacaca tattcagact 60
 ccattttctt gttttctctt caaaacaaca aactaatgtg acggagtatc tagctatgga 120
 actacttggt gttcgcaacc tcatctcttc ttgccctgtc tggacttttg gaacaagaaa 180
 ccttagtagt tcaaaactag cttataacat acatcgatat gggtcttctt gtagagtaga 240
 ttttcaagtg agggctgatg gtggaagcgg gagtagaact tctgttgctt ataaagaggg 300
 ttttgtggac gaggaggatt ttatcaaagc tggtggttct gagcttttgt ttgtccaaat 360
 gcagcaaaaa aagtctatgg agaaacaggc caagctcgcc gataagttgc caccaatacc 420
 ttctggagaa tctgtgatgg acttggttgt aataggttgt ggacctgctg gtctttcact 480
 ggctgcagaa gctgctaagc taggcttgaa agttggcctt attggtcctg atcttccttt 540
 taaaaataat tatggtgtgt gggaagacga gttcaaagat cttggacttg aacgttgtat 600
 cgagcatgct tggaaggaca ccatcgata tcttgacaat gatgctcctg tccttattgg 660
 tcgtgcatat ggacgagtta gccggcattt gctgcatgaa gagttgctga aaaggtgtgt 720
 cgagtcaggt gtatcatatc tgaattctaa agtggaaagg atcactgaag ctggtgatgg 780
 ccatagtctt gtagtttgtg aaaacgacat ctttatccct tgcaggcttg ctactgttgc 840
 atctggagca gcttcaggga aacttttgga gtatgaagta ggtggccctc gtgttttgtgt 900
 ccaaactgct tatggtgtgg aggttgaggt ggagaacaat ccatacgatc ccaacttaat 960
 ggtatttatg gactacagag actatatgca acagaaatta cagtgcctcg aagaagaata 1020
 tccaacattt ctctatgtca tgcccatgtc gccacaaga cttttttttg agggaaacctg 1080
 tttggcctca aaagatgcca tgcctttcga tctactgaag agaaaactaa tgtcacgatt 1140
 gaagactctg ggtatccaag ttacaaaaat ttatgaagag gaatggtctt atattcctgt 1200
 tgggggttct ttaccaaaca cagagcaaaa gaacctagca tttggtgctg cagcaagcat 1260
 ggtgcatcca gcaacaggct attcggttgt acgatcacta tcagaagctc caaaatatgc 1320
 ttctgtaatt gcaaagattt tgaagcaaga taactctgca tatgtggttt ctggacaaag 1380
 cagtgcagta aacatttcaa tgcaagcatg gagcagtctt tggccaaagg agcgaaaacg 1440

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tcaaagagca ttctttcttt tcggggttaga gcttattgtg cagctagata ttgaagcaac 1500
cagaacgttc tttagaacct tcttcgctt gccaaacttg atgtgggtggg gtttccttgg 1560
gtcttcacta tcatctttcg atcttgatt gttttccatg tacatgtttg ttttggcccc 1620
gaacagcatg aggatgtcac ttgtgagaca ttgctttca gatccttctg gtgcagttat 1680
ggttaagct tacctcgaaa ggtaatctgt tttatgaaac tatagtgtct cattaataa 1740
atgaggatcc ttcgtatatg tatatgatca tctctatgta taccctatat tctaattctca 1800
taaagtaatc gaaaattcat tgatagaaaa aaaaaaaaaa aaaaaaaa 1848

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<210> 47

<211> 529

<212> PRT

<213> Adonis palaestina

<400> 47

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Met Glu Leu Leu Gly Val Arg Asn Leu Ile Ser Ser Cys Pro Val Trp
  1              5              10              15

Thr Phe Gly Thr Arg Asn Leu Ser Ser Ser Lys Leu Ala Tyr Asn Ile
      20              25              30

His Arg Tyr Gly Ser Ser Cys Arg Val Asp Phe Gln Val Arg Ala Asp
      35              40              45

Gly Gly Ser Gly Ser Arg Ser Ser Val Ala Tyr Lys Glu Gly Phe Val
  50              55              60

Asp Glu Glu Asp Phe Ile Lys Ala Gly Gly Ser Glu Leu Leu Phe Val
  65              70              75              80

Gln Met Gln Gln Thr Lys Ser Met Glu Lys Gln Ala Lys Leu Ala Asp
      85              90              95

Lys Leu Pro Pro Ile Pro Phe Gly Glu Ser Val Met Asp Leu Val Val
      100              105              110

Ile Gly Cys Gly Pro Ala Gly Leu Ser Leu Ala Ala Glu Ala Ala Lys
      115              120              125

Leu Gly Leu Lys Val Gly Leu Ile Gly Pro Asp Leu Pro Phe Thr Asn
      130              135              140

Asn Tyr Gly Val Trp Glu Asp Glu Phe Lys Asp Leu Gly Leu Glu Arg
      145              150              155              160

Cys Ile Glu His Ala Trp Lys Asp Thr Ile Val Tyr Leu Asp Asn Asp
      165              170              175

Ala Pro Val Leu Ile Gly Arg Ala Tyr Gly Arg Val Ser Arg His Leu
      180              185              190

Leu His Glu Glu Leu Leu Lys Arg Cys Val Glu Ser Gly Val Ser Tyr
      195              200              205

Leu Asp Ser Lys Val Glu Arg Ile Thr Glu Ala Gly Asp Gly His Ser
      210              215              220

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Leu Val Val Cys Glu Asn Glu Ile Phe Ile Pro Cys Arg Leu Ala Thr
 225 230 235 240
 Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Glu Tyr Glu Val Gly
 245 250 255
 Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu Val
 260 265 270
 Glu Asn Asn Pro Tyr Asp Pro Asn Leu Met Val Phe Met Asp Tyr Arg
 275 280 285
 Asp Tyr Met Gln Gln Lys Leu Gln Cys Ser Glu Glu Glu Tyr Pro Thr
 290 295 300
 Phe Leu Tyr Val Met Pro Met Ser Pro Thr Arg Leu Phe Phe Glu Glu
 305 310 315 320
 Thr Cys Leu Ala Ser Lys Asp Ala Met Pro Phe Asp Leu Leu Lys Arg
 325 330 335
 Lys Leu Met Ser Arg Leu Lys Thr Leu Gly Ile Gln Val Thr Lys Val
 340 345 350
 Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn
 355 360 365
 Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val His
 370 375 380
 Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys
 385 390 395 400
 Tyr Ala Ser Val Ile Ala Lys Ile Leu Lys Gln Asp Asn Ser Ala Tyr
 405 410 415
 Val Val Ser Gly Gln Ser Ser Ala Val Asn Ile Ser Met Gln Ala Trp
 420 425 430
 Ser Ser Leu Trp Pro Lys Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu
 435 440 445
 Phe Gly Leu Glu Leu Ile Val Gln Leu Asp Ile Glu Ala Thr Arg Thr
 450 455 460
 Phe Phe Arg Thr Phe Phe Arg Leu Pro Thr Trp Met Trp Trp Gly Phe
 465 470 475 480
 Leu Gly Ser Ser Leu Ser Ser Phe Asp Leu Val Leu Phe Ser Met Tyr
 485 490 495
 Met Phe Val Leu Ala Pro Asn Ser Met Arg Met Ser Leu Val Arg His
 500 505 510
 Leu Leu Ser Asp Pro Ser Gly Ala Val Met Val Arg Ala Tyr Leu Glu
 515 520 525

Arg

<210> 48
 <211> 378
 <212> PRT
 <213> Solanum tuberosum

<220>
 <221> MOD_RES
 <222> (336)
 <223> Variable amino acid

<400> 48
 Asp Glu Phe Lys Asp Leu Gly Leu Gln Ala Cys Ile Glu His Val Trp
 1 5 10 15
 Arg Asp Thr Ile Val Tyr Leu Asp Asp Asp Pro Ile Leu Ile Gly
 20 25 30
 Arg Ala Tyr Gly Arg Val Ser Arg His Leu Leu His Glu Glu Leu Leu
 35 40 45
 Lys Arg Cys Val Glu Ala Gly Val Leu Tyr Leu Asn Ser Lys Val Asp
 50 55 60
 Arg Ile Val Glu Ala Thr Asn Gly His Ser Leu Val Glu Cys Glu Gly
 65 70 75 80
 Asp Val Val Ile Pro Cys Arg Phe Val Thr Val Ala Ser Gly Ala Ala
 85 90 95
 Ser Gly Lys Phe Leu Gln Tyr Glu Leu Gly Gly Pro Arg Val Ser Val
 100 105 110
 Gln Thr Ala Tyr Gly Val Glu Val Glu Val Asp Asn Asn Pro Phe Asp
 115 120 125
 Pro Ser Leu Met Val Phe Met Asp Tyr Arg Asp Tyr Val Arg His Asp
 130 135 140
 Ala Gln Ser Leu Glu Ala Lys Tyr Pro Thr Phe Leu Tyr Ala Met Pro
 145 150 155 160
 Met Ser Pro Thr Arg Val Phe Phe Glu Glu Thr Cys Leu Ala Ser Lys
 165 170 175
 Asp Ala Met Pro Phe Asp Leu Leu Lys Lys Lys Leu Met Leu Arg Leu
 180 185 190
 Asn Thr Leu Gly Val Arg Ile Lys Glu Ile Tyr Glu Glu Glu Trp Ser
 195 200 205
 Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn Thr Glu Gln Lys Thr Leu
 210 215 220
 Ala Phe Gly Ala Ala Ala Ser Met Val His Pro Ala Thr Gly Tyr Ser
 225 230 235 240

Val Val Arg Ser Leu Ser Glu Ala Pro Lys Cys Ala Phe Val Leu Ala
 245 250 255
 Asn Ile Leu Arg Gln Asn His Ser Lys Asn Met Leu Thr Ser Ser Ser
 260 265 270
 Thr Pro Ser Ile Ser Thr Gln Ala Trp Asn Thr Leu Trp Pro Gln Glu
 275 280 285
 Arg Lys Arg Gln Arg Ser Phe Phe Leu Phe Gly Leu Ala Leu Ile Leu
 290 295 300
 Gln Leu Asp Ile Glu Gly Ile Arg Ser Phe Phe Arg Ala Phe Phe Arg
 305 310 315 320
 Val Pro Lys Trp Met Trp Gln Gly Phe Leu Gly Ser Ser Leu Ser Xaa
 325 330 335
 Ala Asp Leu Met Leu Phe Ala Phe Tyr Met Phe Ile Ile Ala Pro Asn
 340 345 350
 Asp Met Arg Arg Gly Leu Ile Arg His Leu Leu Ser Asp Pro Thr Gly
 355 360 365
 Ala Thr Leu Ile Arg Thr Tyr Leu Thr Phe
 370 375

<210> 49
 <211> 524
 <212> PRT
 <213> Arabidopsis thaliana

<400> 49
 Met Glu Cys Val Gly Ala Arg Asn Phe Ala Ala Met Ala Val Ser Thr
 1 5 10 15
 Phe Pro Ser Trp Ser Cys Arg Arg Lys Phe Pro Val Val Lys Arg Tyr
 20 25 30
 Ser Tyr Arg Asn Ile Arg Phe Gly Leu Cys Ser Val Arg Ala Ser Gly
 35 40 45
 Gly Gly Ser Ser Gly Ser Glu Ser Cys Val Ala Val Arg Glu Asp Phe
 50 55 60
 Ala Asp Glu Glu Asp Phe Val Lys Ala Gly Gly Ser Glu Ile Leu Phe
 65 70 75 80
 Val Gln Met Gln Gln Asn Lys Asp Met Asp Glu Gln Ser Lys Leu Val
 85 90 95
 Asp Lys Leu Pro Pro Ile Ser Ile Gly Asp Gly Ala Leu Asp His Val
 100 105 110
 Val Ile Gly Cys Gly Pro Ala Gly Leu Ala Leu Ala Ala Glu Ser Ala
 115 120 125

Lys Leu Gly Leu Lys Val Gly Leu Ile Gly Pro Asp Leu Pro Phe Thr
 130 135 140
 Asn Asn Tyr Gly Val Trp Glu Asp Glu Phe Asn Asp Leu Gly Leu Gln
 145 150 155 160
 Lys Cys Ile Glu His Val Trp Arg Glu Thr Ile Val Tyr Leu Asp Asp
 165 170 175
 Asp Lys Pro Ile Thr Ile Gly Arg Ala Tyr Gly Arg Val Ser Arg Arg
 180 185 190
 Leu Leu His Glu Glu Leu Leu Arg Arg Cys Val Glu Ser Gly Val Ser
 195 200 205
 Tyr Leu Ser Ser Lys Val Asp Ser Ile Thr Glu Ala Ser Asp Gly Leu
 210 215 220
 Arg Leu Val Ala Cys Asp Asp Asn Asn Val Ile Pro Cys Arg Leu Ala
 225 230 235 240
 Thr Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Gln Tyr Glu Val
 245 250 255
 Gly Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu
 260 265 270
 Val Glu Asn Ser Pro Tyr Asp Pro Asp Gln Met Val Phe Met Asp Tyr
 275 280 285
 Arg Asp Tyr Thr Asn Glu Lys Val Arg Ser Leu Glu Ala Glu Tyr Pro
 290 295 300
 Thr Phe Leu Tyr Ala Met Pro Met Thr Lys Ser Arg Leu Phe Phe Glu
 305 310 315 320
 Glu Thr Cys Leu Ala Ser Lys Asp Val Met Pro Phe Asp Leu Leu Lys
 325 330 335
 Thr Lys Leu Met Leu Arg Leu Asp Thr Leu Gly Ile Arg Ile Leu Lys
 340 345 350
 Thr Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro
 355 360 365
 Asn Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val
 370 375 380
 His Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro
 385 390 395 400
 Lys Tyr Ala Ser Val Ile Ala Glu Ile Leu Arg Glu Glu Thr Thr Lys
 405 410 415
 Gln Ile Asn Ser Asn Ile Ser Arg Gln Ala Trp Asp Thr Leu Trp Pro
 420 425 430

Pro Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu Phe Gly Leu Ala Leu
 435 440 445

Ile Val Gln Phe Asp Thr Glu Gly Ile Arg Ser Phe Phe Arg Thr Phe
 450 455 460

Phe Arg Leu Pro Lys Trp Met Trp Gln Gly Phe Leu Gly Ser Thr Leu
 465 470 475 480

Thr Ser Gly Asp Leu Val Leu Phe Ala Leu Tyr Met Phe Val Ile Ser
 485 490 495

Pro Asn Asn Leu Arg Lys Gly Leu Ile Asn His Leu Ile Ser Asp Pro
 500 505 510

Thr Gly Ala Thr Met Ile Lys Thr Tyr Leu Lys Val
 515 520

<210> 50

<211> 529

<212> PRT

<213> Adonis palaestina

<400> 50

Met Glu Leu Leu Gly Val Arg Asn Leu Ile Ser Ser Cys Pro Val Trp
 1 5 10 15

Thr Phe Gly Thr Arg Asn Leu Ser Ser Ser Lys Leu Ala Tyr Asn Ile
 20 25 30

His Arg Tyr Gly Ser Ser Cys Arg Val Asp Phe Gln Val Arg Ala Asp
 35 40 45

Gly Gly Ser Gly Ser Arg Ser Ser Val Ala Tyr Lys Glu Gly Phe Val
 50 55 60

Asp Glu Glu Asp Phe Ile Lys Ala Gly Gly Ser Glu Leu Leu Phe Val
 65 70 75 80

Gln Met Gln Gln Thr Lys Ser Met Glu Lys Gln Ala Lys Leu Ala Asp
 85 90 95

Lys Leu Pro Pro Ile Pro Phe Gly Glu Ser Val Met Asp Leu Val Val
 100 105 110

Ile Gly Cys Gly Pro Ala Gly Leu Ser Leu Ala Ala Glu Ala Ala Lys
 115 120 125

Leu Gly Leu Lys Val Gly Leu Ile Gly Pro Asp Leu Pro Phe Thr Asn
 130 135 140

Asn Tyr Gly Val Trp Glu Asp Glu Phe Lys Asp Leu Gly Leu Glu Arg
 145 150 155 160

Cys Ile Glu His Ala Trp Lys Asp Thr Ile Val Tyr Leu Asp Asn Asp
 165 170 175

Ala Pro Val Leu Ile Gly Arg Ala Tyr Gly Arg Val Ser Arg His Leu
 180 185 190
 Leu His Glu Glu Leu Leu Lys Arg Cys Val Glu Ser Gly Val Ser Tyr
 195 200 205
 Leu Asp Ser Lys Val Glu Arg Ile Thr Glu Ala Gly Asp Gly His Ser
 210 215 220
 Leu Val Val Cys Glu Asn Glu Ile Phe Ile Pro Cys Arg Leu Ala Thr
 225 230 235 240
 Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Glu Tyr Glu Val Gly
 245 250 255
 Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu Val
 260 265 270
 Glu Asn Asn Pro Tyr Asp Pro Asn Leu Met Val Phe Met Asp Tyr Arg
 275 280 285
 Asp Tyr Met Gln Gln Lys Leu Gln Cys Ser Glu Glu Glu Tyr Pro Thr
 290 295 300
 Phe Leu Tyr Val Met Pro Met Ser Pro Thr Arg Leu Phe Phe Glu Glu
 305 310 315 320
 Thr Cys Leu Ala Ser Lys Asp Ala Met Pro Phe Asp Leu Leu Lys Arg
 325 330 335
 Lys Leu Met Ser Arg Leu Lys Thr Leu Gly Ile Gln Val Thr Lys Val
 340 345 350
 Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn
 355 360 365
 Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val His
 370 375 380
 Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys
 385 390 395 400
 Tyr Ala Ser Val Ile Ala Lys Ile Leu Lys Gln Asp Asn Ser Ala Tyr
 405 410 415
 Val Val Ser Gly Gln Ser Ser Ala Val Asn Ile Ser Met Gln Ala Trp
 420 425 430
 Ser Ser Leu Trp Pro Lys Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu
 435 440 445
 Phe Gly Leu Glu Leu Ile Val Gln Leu Asp Ile Glu Ala Thr Arg Thr
 450 455 460
 Phe Phe Arg Thr Phe Phe Arg Leu Pro Thr Trp Met Trp Trp Gly Phe
 465 470 475 480

Leu Leu Ser Asp Pro Ser Gly Ala Val Met Val Arg Ala Tyr Leu Glu
515 520 525

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<210> 51
<211> 529
<212> PRT
<213> Adonis palaestina
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<400> 51
Met Glu Leu Leu Gly Val Arg Asn Leu Ile Ser Ser Cys Pro Val Trp
1 5 10 15

Thr Phe Gly Thr Arg Asn Leu Ser Ser Ser Lys Leu Ala Tyr Asn Ile
20 25 30

His Arg Tyr Gly Ser Ser Cys Arg Val Asp Phe Gln Val Arg Ala Asp
35 40 45

Gly Gly Ser Gly Ser Arg Thr Ser Val Ala Tyr Lys Glu Gly Phe Val
50 55 60

Asp Glu Glu Asp Phe Ile Lys Ala Gly Gly Ser Glu Leu Leu Phe Val
65 70 75 80

Gln Met Gln Gln Thr Lys Ser Met Glu Lys Gln Ala Lys Leu Ala Asp
85 90 95

Lys Leu Pro Pro Ile Pro Phe Gly Glu Ser Val Met Asp Leu Val Val
100 105 110

Ile Gly Cys Gly Pro Ala Gly Leu Ser Leu Ala Ala Glu Ala Ala Lys
115 120 125

Leu Gly Leu Lys Val Gly Leu Ile Gly Pro Asp Leu Pro Phe Thr Asn
130 135 140

Asn Tyr Gly Val Trp Glu Asp Glu Phe Lys Asp Leu Gly Leu Glu Arg
145 150 155 160

Cys Ile Glu His Ala Trp Lys Asp Thr Ile Val Tyr Leu Asp Asn Asp
165 170 175

Ala Pro Val Leu Ile Gly Arg Ala Tyr Gly Arg Val Ser Arg His Leu
180 185 190

Leu His Glu Glu Leu Leu Lys Arg Cys Val Glu Ser Gly Val Ser Tyr
195 200 205

Leu Asn Ser Lys Val Glu Arg Ile Thr Glu Ala Gly Asp Gly His Ser
 210 215 220
 Leu Val Val Cys Glu Asn Asp Ile Phe Ile Pro Cys Arg Leu Ala Thr
 225 230 235 240
 Val Ala Ser Gly Ala Ala Ser Gly Lys Leu Leu Glu Tyr Glu Val Gly
 245 250 255
 Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly Val Glu Val Glu Val
 260 265 270
 Glu Asn Asn Pro Tyr Asp Pro Asn Leu Met Val Phe Met Asp Tyr Arg
 275 280 285
 Asp Tyr Met Gln Gln Lys Leu Gln Cys Ser Glu Glu Glu Tyr Pro Thr
 290 295 300
 Phe Leu Tyr Val Met Pro Met Ser Pro Thr Arg Leu Phe Phe Glu Glu
 305 310 315 320
 Thr Cys Leu Ala Ser Lys Asp Ala Met Pro Phe Asp Leu Leu Lys Arg
 325 330 335
 Lys Leu Met Ser Arg Leu Lys Thr Leu Gly Ile Gln Val Thr Lys Ile
 340 345 350
 Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn
 355 360 365
 Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser Met Val His
 370 375 380
 Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys
 385 390 395 400
 Tyr Ala Ser Val Ile Ala Lys Ile Leu Lys Gln Asp Asn Ser Ala Tyr
 405 410 415
 Val Val Ser Gly Gln Ser Ser Ala Val Asn Ile Ser Met Gln Ala Trp
 420 425 430
 Ser Ser Leu Trp Pro Lys Glu Arg Lys Arg Gln Arg Ala Phe Phe Leu
 435 440 445
 Phe Gly Leu Glu Leu Ile Val Gln Leu Asp Ile Glu Ala Thr Arg Thr
 450 455 460
 Phe Phe Arg Thr Phe Phe Arg Leu Pro Thr Trp Met Trp Trp Gly Phe
 465 470 475 480
 Leu Gly Ser Ser Leu Ser Ser Phe Asp Leu Val Leu Phe Ser Met Tyr
 485 490 495
 Met Phe Val Leu Ala Pro Asn Ser Met Arg Met Ser Leu Val Arg His
 500 505 510

Leu Leu Ser Asp Pro Ser Gly Ala Val Met Val Lys Ala Tyr Leu Glu
 515 520 525

Arg

<210> 52

<211> 533

<212> PRT

<213> Lactuca sativa

<400> 52

Met Glu Cys Phe Gly Ala Arg Asn Met Thr Ala Thr Met Ala Val Phe
 1 5 10 15

Thr Cys Pro Arg Phe Thr Asp Cys Asn Ile Arg His Lys Phe Ser Leu
 20 25 30

Leu Lys Gln Arg Arg Phe Thr Asn Leu Ser Ala Ser Ser Ser Leu Arg
 35 40 45

Gln Ile Lys Cys Ser Ala Lys Ser Asp Arg Cys Val Val Asp Lys Gln
 50 55 60

Gly Ile Ser Val Ala Asp Glu Glu Asp Tyr Val Lys Ala Gly Gly Ser
 65 70 75 80

Glu Leu Phe Phe Val Gln Met Gln Arg Thr Lys Ser Met Glu Ser Gln
 85 90 95

Ser Lys Leu Ser Glu Lys Leu Ala Gln Ile Pro Ile Gly Asn Cys Ile
 100 105 110

Leu Asp Leu Val Val Ile Gly Cys Gly Pro Ala Gly Leu Ala Leu Ala
 115 120 125

Ala Glu Ser Ala Lys Leu Gly Leu Asn Val Gly Leu Ile Gly Pro Asp
 130 135 140

Leu Pro Phe Thr Asn Asn Tyr Gly Val Trp Gln Asp Glu Phe Ile Gly
 145 150 155 160

Leu Gly Leu Glu Gly Cys Ile Glu His Ser Trp Lys Asp Thr Leu Val
 165 170 175

Tyr Leu Asp Asp Ala Asp Pro Ile Arg Ile Gly Arg Ala Tyr Gly Arg
 180 185 190

Val His Arg Asp Leu Leu His Glu Glu Leu Leu Arg Arg Cys Val Glu
 195 200 205

Ser Gly Val Ser Tyr Leu Ser Ser Lys Val Glu Arg Ile Thr Glu Ala
 210 215 220

Pro Asn Gly Tyr Ser Leu Ile Glu Cys Glu Gly Asn Ile Thr Ile Pro
 225 230 235 240

Cys Arg Leu Ala Thr Val Ala Ser Gly Ala Ala Ser Gly Lys Phe Leu
 245 250 255
 Glu Tyr Glu Leu Gly Gly Pro Arg Val Cys Val Gln Thr Ala Tyr Gly
 260 265 270
 Ile Glu Val Glu Val Glu Asn Asn Pro Tyr Asp Pro Asp Leu Met Val
 275 280 285
 Phe Met Asp Tyr Arg Asp Phe Ser Lys His Lys Pro Glu Ser Leu Glu
 290 295 300
 Ala Lys Tyr Pro Thr Phe Leu Tyr Val Met Ala Met Ser Pro Thr Lys
 305 310 315 320
 Ile Phe Phe Glu Glu Thr Cys Leu Ala Ser Arg Glu Ala Met Pro Phe
 325 330 335
 Asn Leu Leu Lys Ser Lys Leu Met Ser Arg Leu Lys Ala Met Gly Ile
 340 345 350
 Arg Ile Thr Arg Thr Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly
 355 360 365
 Gly Ser Leu Pro Asn Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala
 370 375 380
 Ala Ser Met Val His Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu
 385 390 395 400
 Ser Glu Ala Pro Asn Tyr Ala Ala Val Ile Ala Lys Ile Leu Arg Gln
 405 410 415
 Asp Gln Ser Lys Glu Met Ile Ser Leu Gly Lys Tyr Thr Asn Ile Ser
 420 425 430
 Lys Gln Ala Trp Glu Thr Leu Trp Pro Leu Glu Arg Lys Arg Gln Arg
 435 440 445
 Ala Phe Phe Leu Phe Gly Leu Ser His Ile Val Leu Met Asp Leu Glu
 450 455 460
 Gly Thr Arg Thr Phe Phe Arg Thr Phe Phe Arg Leu Pro Lys Trp Met
 465 470 475 480
 Trp Trp Gly Phe Leu Gly Ser Ser Leu Ser Ser Thr Asp Leu Ile Ile
 485 490 495
 Phe Ala Leu Tyr Met Phe Val Ile Ala Pro His Ser Leu Arg Met Glu
 500 505 510
 Leu Val Arg His Leu Leu Ser Asp Pro Thr Gly Ala Thr Met Val Lys
 515 520 525
 Ala Tyr Leu Thr Ile
 530

<210> 53
 <211> 526
 <212> PRT
 <213> Lycopersicon esculentum

<400> 53

Met	Glu	Cys	Val	Gly	Val	Gln	Asn	Val	Gly	Ala	Met	Ala	Val	Leu	Thr	1	5	10	15
Arg	Pro	Arg	Leu	Asn	Arg	Trp	Ser	Gly	Gly	Glu	Leu	Cys	Gln	Glu	Lys	20	25	30	
Ser	Ile	Phe	Leu	Ala	Tyr	Glu	Gln	Tyr	Glu	Ser	Lys	Cys	Asn	Ser	Ser	35	40	45	
Ser	Gly	Ser	Asp	Ser	Cys	Val	Val	Asp	Lys	Glu	Asp	Phe	Ala	Asp	Glu	50	55	60	
Glu	Asp	Tyr	Ile	Lys	Ala	Gly	Gly	Ser	Gln	Leu	Val	Phe	Val	Gln	Met	65	70	75	80
Gln	Gln	Lys	Lys	Asp	Met	Asp	Gln	Gln	Ser	Lys	Leu	Ser	Asp	Glu	Leu	85	90	95	
Arg	Gln	Ile	Ser	Ala	Gly	Gln	Thr	Val	Leu	Asp	Leu	Val	Val	Ile	Gly	100	105	110	
Cys	Gly	Pro	Ala	Gly	Leu	Ala	Leu	Ala	Ala	Glu	Ser	Ala	Lys	Leu	Gly	115	120	125	
Leu	Asn	Val	Gly	Leu	Val	Gly	Pro	Asp	Leu	Pro	Phe	Thr	Asn	Asn	Tyr	130	135	140	
Gly	Val	Trp	Glu	Asp	Glu	Phe	Lys	Asp	Leu	Gly	Leu	Gln	Ala	Cys	Ile	145	150	155	160
Glu	His	Val	Trp	Arg	Asp	Thr	Ile	Val	Tyr	Leu	Asp	Asp	Asp	Glu	Pro	165	170	175	
Ile	Leu	Ile	Gly	Arg	Ala	Tyr	Gly	Arg	Val	Ser	Arg	His	Phe	Leu	His	180	185	190	
Glu	Glu	Leu	Leu	Lys	Arg	Cys	Val	Glu	Ala	Gly	Val	Leu	Tyr	Leu	Asn	195	200	205	
Ser	Lys	Val	Asp	Arg	Ile	Val	Glu	Ala	Thr	Asn	Gly	Gln	Ser	Leu	Val	210	215	220	
Glu	Cys	Glu	Gly	Asp	Val	Val	Ile	Pro	Cys	Arg	Phe	Val	Thr	Val	Ala	225	230	235	240
Ser	Gly	Ala	Ala	Ser	Gly	Lys	Phe	Leu	Gln	Tyr	Glu	Leu	Gly	Ser	Pro	245	250	255	
Arg	Val	Ser	Val	Gln	Thr	Ala	Tyr	Gly	Val	Glu	Val	Glu	Val	Asp	Asn	260	265	270	

Asn Pro Phe Asp Pro Ser Leu Met Val Phe Met Asp Tyr Arg Asp Tyr
 275 280 285
 Leu Arg His Asp Ala Gln Ser Leu Glu Ala Lys Tyr Pro Thr Phe Leu
 290 295 300
 Tyr Ala Met Pro Met Ser Pro Thr Arg Val Phe Phe Glu Glu Thr Cys
 305 310 315 320
 Leu Ala Ser Lys Asp Ala Met Pro Phe Asp Leu Leu Lys Lys Lys Leu
 325 330 335
 Met Leu Arg Leu Asn Thr Leu Gly Val Arg Ile Lys Glu Ile Tyr Glu
 340 345 350
 Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser Leu Pro Asn Thr Glu
 355 360 365
 Gln Lys Thr Leu Ala Phe Gly Ala Ala Ala Ser Met Val His Pro Ala
 370 375 380
 Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu Ala Pro Lys Cys Ala
 385 390 395 400
 Ser Val Leu Ala Asn Ile Leu Arg Gln His Tyr Ser Lys Asn Met Leu
 405 410 415
 Thr Ser Ser Ser Ile Pro Ser Ile Ser Thr Gln Ala Trp Asn Thr Leu
 420 425 430
 Trp Pro Gln Glu Arg Lys Arg Gln Arg Ser Phe Phe Leu Phe Gly Leu
 435 440 445
 Ala Leu Ile Leu Gln Leu Asp Ile Glu Gly Ile Arg Ser Phe Phe Arg
 450 455 460
 Ala Phe Phe Arg Val Pro Lys Trp Met Trp Gln Gly Phe Leu Gly Ser
 465 470 475 480
 Ser Leu Ser Ser Ala Asp Leu Met Leu Phe Ala Phe Tyr Met Phe Ile
 485 490 495
 Ile Ala Pro Asn Asp Met Arg Lys Gly Leu Ile Arg His Leu Leu Ser
 500 505 510
 Asp Pro Thr Gly Ala Thr Leu Ile Arg Thr Tyr Leu Thr Phe
 515 520 525

<210> 54
 <211> 516
 <212> PRT
 <213> Tagetes erecta

<400> 54
 Met Ser Met Arg Ala Gly His Met Thr Ala Thr Met Ala Ala Phe Thr
 1 5 10 15

Cys	Pro	Arg	Phe	Met	Thr	Ser	Ile	Arg	Tyr	Thr	Lys	Gln	Ile	Lys	Cys	20	25	30
Asn	Ala	Ala	Lys	Ser	Gln	Leu	Val	Val	Lys	Gln	Glu	Ile	Glu	Glu	Glu	35	40	45
Glu	Asp	Tyr	Val	Lys	Ala	Gly	Gly	Ser	Glu	Leu	Leu	Phe	Val	Gln	Met	50	55	60
Gln	Gln	Asn	Lys	Ser	Met	Asp	Ala	Gln	Ser	Ser	Leu	Ser	Gln	Lys	Leu	65	70	75
Pro	Arg	Val	Pro	Ile	Gly	Gly	Gly	Gly	Asp	Ser	Asn	Cys	Ile	Leu	Asp	85	90	95
Leu	Val	Val	Ile	Gly	Cys	Gly	Pro	Ala	Gly	Leu	Ala	Leu	Ala	Gly	Glu	100	105	110
Ser	Ala	Lys	Leu	Gly	Leu	Asn	Val	Ala	Leu	Ile	Gly	Pro	Asp	Leu	Pro	115	120	125
Phe	Thr	Asn	Asn	Tyr	Gly	Val	Trp	Glu	Asp	Glu	Phe	Ile	Gly	Leu	Gly	130	135	140
Leu	Glu	Gly	Cys	Ile	Glu	His	Val	Trp	Arg	Asp	Thr	Val	Val	Tyr	Leu	145	150	155
Asp	Asp	Asn	Asp	Pro	Ile	Leu	Ile	Gly	Arg	Ala	Tyr	Gly	Arg	Val	Ser	165	170	175
Arg	Asp	Leu	Leu	His	Glu	Glu	Leu	Leu	Thr	Arg	Cys	Met	Glu	Ser	Gly	180	185	190
Val	Ser	Tyr	Leu	Ser	Ser	Lys	Val	Glu	Arg	Ile	Thr	Glu	Ala	Pro	Asn	195	200	205
Gly	Leu	Ser	Leu	Ile	Glu	Cys	Glu	Gly	Asn	Ile	Thr	Ile	Pro	Cys	Arg	210	215	220
Leu	Ala	Thr	Val	Ala	Ser	Gly	Ala	Ala	Ser	Gly	Lys	Leu	Leu	Gln	Tyr	225	230	235
Glu	Leu	Gly	Gly	Pro	Arg	Val	Cys	Val	Gln	Thr	Ala	Tyr	Gly	Ile	Glu	245	250	255
Val	Glu	Val	Glu	Ser	Ile	Pro	Tyr	Asp	Pro	Ser	Leu	Met	Val	Phe	Met	260	265	270
Asp	Tyr	Arg	Asp	Tyr	Thr	Lys	His	Lys	Ser	Gln	Ser	Leu	Glu	Ala	Gln	275	280	285
Tyr	Pro	Thr	Phe	Leu	Tyr	Val	Met	Pro	Met	Ser	Pro	Thr	Lys	Val	Phe	290	295	300
Phe	Glu	Glu	Thr	Cys	Leu	Ala	Ser	Lys	Glu	Ala	Met	Pro	Phe	Glu	Leu	305	310	315
																		320

Leu Lys Thr Lys Leu Met Ser Arg Leu Lys Thr Met Gly Ile Arg Ile
 325 330 335
 Thr Lys Thr Tyr Glu Glu Glu Trp Ser Tyr Ile Pro Val Gly Gly Ser
 340 345 350
 Leu Pro Asn Thr Glu Gln Lys Asn Leu Ala Phe Gly Ala Ala Ala Ser
 355 360 365
 Met Val His Pro Ala Thr Gly Tyr Ser Val Val Arg Ser Leu Ser Glu
 370 375 380
 Ala Pro Asn Tyr Ala Ala Val Ile Ala Lys Ile Leu Gly Lys Gly Asn
 385 390 395 400
 Ser Lys Gln Met Leu Asp His Gly Arg Tyr Thr Thr Asn Ile Ser Lys
 405 410 415
 Gln Ala Trp Glu Thr Leu Trp Pro Leu Glu Arg Lys Arg Gln Arg Ala
 420 425 430
 Phe Phe Leu Phe Gly Leu Ala Leu Ile Val Gln Met Asp Ile Glu Gly
 435 440 445
 Thr Arg Thr Phe Phe Arg Thr Phe Phe Arg Leu Pro Thr Trp Met Trp
 450 455 460
 Trp Gly Phe Leu Gly Ser Ser Leu Ser Ser Thr Asp Leu Ile Ile Phe
 465 470 475 480
 Ala Phe Tyr Met Phe Ile Ile Ala Pro His Ser Leu Arg Met Gly Leu
 485 490 495
 Val Arg His Leu Leu Ser Asp Pro Thr Gly Gly Thr Met Leu Lys Ala
 500 505 510
 Tyr Leu Thr Ile
 515

<210> 55

<211> 501

<212> PRT

<213> Arabidopsis thaliana

<400> 55

Met Asp Thr Leu Leu Lys Thr Pro Asn Lys Leu Asp Phe Phe Ile Pro
 1 5 10 15
 Gln Phe His Gly Phe Glu Arg Leu Cys Ser Asn Asn Pro Tyr His Ser
 20 25 30
 Arg Val Arg Leu Gly Val Lys Lys Arg Ala Ile Lys Ile Val Ser Ser
 35 40 45
 Val Val Ser Gly Ser Ala Ala Leu Leu Asp Leu Val Pro Glu Thr Lys
 50 55 60

Lys Glu Asn Leu Asp Phe Glu Leu Pro Leu Tyr Asp Thr Ser Lys Ser
 65 70 75 80
 Gln Val Val Asp Leu Ala Ile Val Gly Gly Gly Pro Ala Gly Leu Ala
 85 90 95
 Val Ala Gln Gln Val Ser Glu Ala Gly Leu Ser Val Cys Ser Ile Asp
 100 105 110
 Pro Ser Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val Trp Val Asp
 115 120 125
 Glu Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Thr Thr Trp Ser
 130 135 140
 Gly Ala Val Val Tyr Val Asp Glu Gly Val Lys Lys Asp Leu Ser Arg
 145 150 155 160
 Pro Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys Met Leu Gln
 165 170 175
 Lys Cys Ile Thr Asn Gly Val Lys Phe His Gln Ser Lys Val Thr Asn
 180 185 190
 Val Val His Glu Glu Ala Asn Ser Thr Val Val Cys Ser Asp Gly Val
 195 200 205
 Lys Ile Gln Ala Ser Val Val Leu Asp Ala Thr Gly Phe Ser Arg Cys
 210 215 220
 Leu Val Gln Tyr Asp Lys Pro Tyr Asn Pro Gly Tyr Gln Val Ala Tyr
 225 230 235 240
 Gly Ile Val Ala Glu Val Asp Gly His Pro Phe Asp Val Asp Lys Met
 245 250 255
 Val Phe Met Asp Trp Arg Asp Lys His Leu Asp Ser Tyr Pro Glu Leu
 260 265 270
 Lys Glu Arg Asn Ser Lys Ile Pro Thr Phe Leu Tyr Ala Met Pro Phe
 275 280 285
 Ser Ser Asn Arg Ile Phe Leu Glu Glu Thr Ser Leu Val Ala Arg Pro
 290 295 300
 Gly Leu Arg Met Glu Asp Ile Gln Glu Arg Met Ala Ala Arg Leu Lys
 305 310 315 320
 His Leu Gly Ile Asn Val Lys Arg Ile Glu Glu Asp Glu Arg Cys Val
 325 330 335
 Ile Pro Met Gly Gly Pro Leu Pro Val Leu Pro Gln Arg Val Val Gly
 340 345 350
 Ile Gly Gly Thr Ala Gly Met Val His Pro Ser Thr Gly Tyr Met Val
 355 360 365

Ala Arg Thr Leu Ala Ala Ala Pro Ile Val Ala Asn Ala Ile Val Arg
 370 375 380

Tyr Leu Gly Ser Pro Ser Ser Asn Ser Leu Arg Gly Asp Gln Leu Ser
 385 390 395 400

Ala Glu Val Trp Arg Asp Leu Trp Pro Ile Glu Arg Arg Arg Gln Arg
 405 410 415

Glu Phe Phe Cys Phe Gly Met Asp Ile Leu Leu Lys Leu Asp Leu Asp
 420 425 430

Ala Thr Arg Arg Phe Phe Asp Ala Phe Phe Asp Leu Gln Pro His Tyr
 435 440 445

Trp His Gly Phe Leu Ser Ser Arg Leu Phe Leu Pro Glu Leu Leu Val
 450 455 460

Phe Gly Leu Ser Leu Phe Ser His Ala Ser Asn Thr Ser Arg Leu Glu
 465 470 475 480

Ile Met Thr Lys Gly Thr Val Pro Leu Ala Lys Met Ile Asn Asn Leu
 485 490 495

Val Gln Asp Arg Asp
 500

<210> 56
 <211> 502
 <212> PRT
 <213> Adonis palaestina

<400> 56
 Met Asp Thr Leu Leu Arg Thr His Asn Lys Leu Glu Leu Leu Pro Thr
 1 5 10 15

Leu His Gly Phe Ala Glu Lys Gln His Leu Val Ser Thr Ser Lys Leu
 20 25 30

Gln Asn Gln Val Phe Arg Ile Ala Ser Arg Asn Ile His Pro Cys Arg
 35 40 45

Asn Gly Thr Val Lys Ala Arg Gly Ser Ala Leu Leu Glu Leu Val Pro
 50 55 60

Glu Thr Lys Lys Glu Asn Leu Glu Phe Asp Leu Pro Ala Tyr Asp Pro
 65 70 75 80

Ser Arg Gly Ile Val Val Asp Leu Ala Val Val Gly Gly Gly Pro Ala
 85 90 95

Gly Leu Ala Ile Ala Gln Gln Val Ser Glu Ala Gly Leu Leu Val Cys
 100 105 110

Ser Ile Asp Pro Ser Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val
 115 120 125

Trp Val Asp Glu Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Thr
 130 135 140
 Thr Trp Ser Gly Ala Val Val Tyr Thr Asp Asp Asn Ser Lys Lys Tyr
 145 150 155 160
 Leu Asp Arg Pro Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys
 165 170 175
 Met Leu Gln Lys Cys Val Thr Asn Gly Val Lys Phe His Gln Ala Lys
 180 185 190
 Val Ile Lys Val Ile His Glu Glu Ser Lys Ser Leu Leu Ile Cys Asn
 195 200 205
 Asp Gly Ile Thr Ile Asn Ala Thr Val Val Leu Asp Ala Thr Gly Phe
 210 215 220
 Ser Arg Cys Leu Val Gln Tyr Asp Lys Pro Tyr Asn Pro Gly Tyr Gln
 225 230 235 240
 Val Ala Tyr Gly Ile Met Ala Glu Val Glu Glu His Pro Phe Asp Leu
 245 250 255
 Asp Lys Met Leu Phe Met Asp Trp Arg Asp Ser His Leu Asn Glu Lys
 260 265 270
 Leu Glu Leu Lys Asp Lys Asn Arg Lys Ile Pro Thr Phe Leu Tyr Ala
 275 280 285
 Met Pro Phe Ser Ser Thr Lys Ile Phe Leu Glu Glu Thr Ser Leu Val
 290 295 300
 Ala Arg Pro Gly Leu Arg Phe Glu Asp Ile Gln Glu Arg Met Val Ala
 305 310 315 320
 Arg Leu Lys His Leu Gly Ile Lys Val Lys Ser Ile Glu Glu Asp Glu
 325 330 335
 Arg Cys Val Ile Pro Met Gly Gly Pro Leu Pro Val Leu Pro Gln Arg
 340 345 350
 Val Val Gly Ile Gly Gly Thr Ala Gly Met Val His Pro Ser Thr Gly
 355 360 365
 Tyr Met Val Ala Arg Thr Leu Ala Ala Ala Pro Val Val Ala Lys Ser
 370 375 380
 Ile Val Gln Tyr Leu Gly Ser Asp Arg Ser Leu Ser Gly Asn Glu Leu
 385 390 395 400
 Ser Ala Glu Val Trp Lys Asp Leu Trp Pro Ile Glu Arg Arg Arg Gln
 405 410 415
 Arg Glu Phe Phe Cys Phe Gly Met Asp Ile Leu Leu Lys Leu Asp Leu
 420 425 430

Gln Gly Thr Arg Arg Phe Phe Asp Ala Phe Phe Asp Leu Glu Pro His
 435 440 445

Tyr Trp His Gly Phe Leu Ser Ser Arg Leu Phe Leu Pro Glu Leu Leu
 450 455 460

Phe Phe Gly Leu Ser Leu Phe Ser His Ala Ser Asn Ala Ser Arg Ile
 465 470 475 480

Glu Ile Met Ala Lys Gly Thr Val Pro Leu Val Asn Met Met Asn Asn
 485 490 495

Leu Ile Gln Asp Thr Asp
 500

<210> 57
 <211> 498
 <212> PRT
 <213> Capsicum annum

<400> 57
 Met Asp Thr Leu Leu Arg Thr Pro Asn Asn Leu Glu Phe Leu His Gly
 1 5 10 15

Phe Gly Val Lys Val Ser Ala Phe Ser Ser Val Lys Ser Gln Lys Phe
 20 25 30

Gly Ala Lys Lys Phe Cys Glu Gly Leu Gly Ser Arg Ser Val Cys Val
 35 40 45

Lys Ala Ser Ser Ser Ala Leu Leu Glu Leu Val Pro Glu Thr Lys Lys
 50 55 60

Glu Asn Leu Asp Phe Glu Leu Pro Met Tyr Asp Pro Ser Lys Gly Val
 65 70 75 80

Val Val Asp Leu Ala Val Val Gly Gly Gly Pro Ala Gly Leu Ala Val
 85 90 95

Ala Gln Gln Val Ser Glu Ala Gly Leu Ser Val Cys Ser Ile Asp Pro
 100 105 110

Asn Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val Trp Val Asp Glu
 115 120 125

Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Ala Thr Trp Ser Gly
 130 135 140

Ala Ala Val Tyr Ile Asp Asp Lys Thr Thr Lys Asp Leu Asn Arg Pro
 145 150 155 160

Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys Met Met Gln Lys
 165 170 175

Cys Ile Leu Asn Gly Val Lys Phe His Gln Ala Lys Val Ile Lys Val
 180 185 190

Ile His Glu Glu Ser Lys Ser Met Leu Ile Cys Asn Asp Gly Ile Thr
 195 200 205
 Ile Gln Ala Thr Val Val Leu Asp Ala Thr Gly Phe Ser Arg Ser Leu
 210 215 220
 Val Gln Tyr Asp Lys Pro Tyr Asn Pro Gly Tyr Gln Val Ala Tyr Gly
 225 230 235 240
 Ile Leu Ala Glu Val Glu Glu His Pro Phe Asp Val Asn Lys Met Val
 245 250 255
 Phe Met Asp Trp Arg Asp Ser His Leu Lys Asn Asn Val Glu Leu Lys
 260 265 270
 Glu Arg Asn Ser Arg Ile Pro Thr Phe Leu Tyr Ala Met Pro Phe Ser
 275 280 285
 Ser Asn Arg Ile Phe Leu Glu Glu Thr Ser Leu Val Ala Arg Pro Gly
 290 295 300
 Leu Gly Met Asp Asp Ile Gln Glu Arg Met Val Ala Arg Leu Ser His
 305 310 315 320
 Leu Gly Ile Lys Val Lys Ser Ile Glu Glu Asp Glu His Cys Val Ile
 325 330 335
 Pro Met Gly Gly Pro Leu Pro Val Leu Pro Gln Arg Val Val Gly Ile
 340 345 350
 Gly Gly Thr Ala Gly Met Val His Pro Ser Thr Gly Tyr Met Val Ala
 355 360 365
 Arg Thr Leu Ala Ala Ala Pro Val Val Ala Asn Ala Ile Ile Gln Tyr
 370 375 380
 Leu Ser Ser Glu Arg Ser His Ser Gly Asp Glu Leu Ser Ala Ala Val
 385 390 395 400
 Trp Lys Asp Leu Trp Pro Ile Glu Arg Arg Arg Gln Arg Glu Phe Phe
 405 410 415
 Cys Phe Gly Met Asp Ile Leu Leu Lys Leu Asp Leu Pro Ala Thr Arg
 420 425 430
 Arg Phe Phe Asp Ala Phe Phe Asp Leu Glu Pro Arg Tyr Trp His Gly
 435 440 445
 Phe Leu Ser Ser Arg Leu Phe Leu Pro Glu Leu Ile Val Phe Gly Leu
 450 455 460
 Ser Leu Phe Ser His Ala Ser Asn Thr Ser Arg Leu Glu Ile Met Thr
 465 470 475 480
 Lys Gly Thr Leu Pro Leu Val His Met Ile Asn Asn Leu Leu Gln Asp
 485 490 495
 Lys Glu

<210> 58
 <211> 500
 <212> PRT
 <213> Lycopersicon esculentum

<400> 58
 Met Asp Thr Leu Leu Lys Thr Pro Asn Asn Leu Glu Phe Leu Asn Pro
 1 5 10 15
 His His Gly Phe Ala Val Lys Ala Ser Thr Phe Arg Ser Glu Lys His
 20 25 30
 His Asn Phe Gly Ser Arg Lys Phe Cys Glu Thr Leu Gly Arg Ser Val
 35 40 45
 Cys Val Lys Gly Ser Ser Ser Ala Leu Leu Glu Leu Val Pro Glu Thr
 50 55 60
 Lys Lys Glu Asn Leu Asp Phe Glu Leu Pro Met Tyr Asp Pro Ser Lys
 65 70 75 80
 Gly Val Val Val Asp Leu Ala Val Val Gly Gly Gly Pro Ala Gly Leu
 85 90 95
 Ala Val Ala Gln Gln Val Ser Glu Ala Gly Leu Ser Val Cys Ser Ile
 100 105 110
 Asp Pro Asn Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val Trp Val
 115 120 125
 Asp Glu Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Ala Thr Trp
 130 135 140
 Ser Gly Ala Ala Val Tyr Ile Asp Asp Asn Thr Ala Lys Asp Leu His
 145 150 155 160
 Arg Pro Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys Met Met
 165 170 175
 Gln Lys Cys Ile Met Asn Gly Val Lys Phe His Gln Ala Lys Val Ile
 180 185 190
 Lys Val Ile His Glu Glu Ser Lys Ser Met Leu Ile Cys Asn Asp Gly
 195 200 205
 Ile Thr Ile Gln Ala Thr Val Val Leu Asp Ala Thr Gly Phe Ser Arg
 210 215 220
 Ser Leu Val Gln Tyr Asp Lys Pro Tyr Asn Pro Gly Tyr Gln Val Ala
 225 230 235 240
 Tyr Gly Ile Leu Ala Glu Val Glu Glu His Pro Phe Asp Val Asn Lys
 245 250 255

Met Val Phe Met Asp Trp Arg Asp Ser His Leu Lys Asn Asn Thr Asp
 260 265 270
 Leu Lys Glu Arg Asn Ser Arg Ile Pro Thr Phe Leu Tyr Ala Met Pro
 275 280 285
 Phe Ser Ser Asn Arg Ile Phe Leu Glu Glu Thr Ser Leu Val Ala Arg
 290 295 300
 Pro Gly Leu Arg Ile Asp Asp Ile Gln Glu Arg Met Val Ala Arg Leu
 305 310 315 320
 Asn His Leu Gly Ile Lys Val Lys Ser Ile Glu Glu Asp Glu His Cys
 325 330 335
 Leu Ile Pro Met Gly Gly Pro Leu Pro Val Leu Pro Gln Arg Val Val
 340 345 350
 Gly Ile Gly Gly Thr Ala Gly Met Val His Pro Ser Thr Gly Tyr Met
 355 360 365
 Val Ala Arg Thr Leu Ala Ala Ala Pro Val Val Ala Asn Ala Ile Ile
 370 375 380
 Gln Tyr Leu Gly Ser Glu Arg Ser His Ser Gly Asn Glu Leu Ser Thr
 385 390 395 400
 Ala Val Trp Lys Asp Leu Trp Pro Ile Glu Arg Arg Arg Gln Arg Glu
 405 410 415
 Phe Phe Cys Phe Gly Met Asp Ile Leu Leu Lys Leu Asp Leu Pro Ala
 420 425 430
 Thr Arg Arg Phe Phe Asp Ala Phe Phe Asp Leu Glu Pro Arg Tyr Trp
 435 440 445
 His Gly Phe Leu Ser Ser Arg Leu Phe Leu Pro Glu Leu Ile Val Phe
 450 455 460
 Gly Leu Ser Leu Phe Ser His Ala Ser Asn Thr Ser Arg Phe Glu Ile
 465 470 475 480
 Met Thr Lys Gly Thr Val Pro Leu Val Asn Met Ile Asn Asn Leu Leu
 485 490 495
 Gln Asp Lys Glu
 500

<210> 59

<211> 500

<212> PRT

<213> *Nicotiana tabacum*

<400> 59

Met Asp Thr Leu Leu Lys Thr Pro Asn Lys Leu Glu Phe Leu His Pro
 1 5 10 15

Val His Gly Phe Ser Val Lys Ala Ser Ser Phe Asn Ser Val Lys Pro
 20 25 30
 His Lys Phe Gly Ser Arg Lys Ile Cys Glu Asn Trp Gly Lys Gly Val
 35 40 45
 Cys Val Lys Ala Lys Ser Ser Ala Leu Leu Glu Leu Val Pro Glu Thr
 50 55 60
 Lys Lys Glu Asn Leu Asp Phe Glu Leu Pro Met Tyr Asp Pro Ser Lys
 65 70 75 80
 Gly Leu Val Val Asp Leu Ala Val Val Gly Gly Gly Pro Ala Gly Leu
 85 90 95
 Ala Val Ala Gln Gln Val Ser Glu Ala Gly Leu Ser Val Val Ser Ile
 100 105 110
 Asp Pro Ser Pro Lys Leu Ile Trp Pro Asn Asn Tyr Gly Val Trp Val
 115 120 125
 Asp Glu Phe Glu Ala Met Asp Leu Leu Asp Cys Leu Asp Ala Thr Trp
 130 135 140
 Ser Gly Thr Val Val Tyr Ile Asp Asp Asn Thr Thr Lys Asp Leu Asp
 145 150 155 160
 Arg Pro Tyr Gly Arg Val Asn Arg Lys Gln Leu Lys Ser Lys Met Met
 165 170 175
 Gln Lys Cys Ile Leu Asn Gly Val Lys Phe His His Ala Lys Val Ile
 180 185 190
 Lys Val Ile His Glu Glu Ala Lys Ser Met Leu Ile Cys Asn Asp Gly
 195 200 205
 Val Thr Ile Gln Ala Thr Val Val Leu Asp Ala Thr Gly Phe Ser Arg
 210 215 220
 Cys Leu Val Gln Tyr Asp Lys Pro Tyr Lys Pro Gly Tyr Gln Val Ala
 225 230 235 240
 Tyr Gly Ile Leu Ala Glu Val Glu Glu His Pro Phe Asp Thr Ser Lys
 245 250 255
 Met Val Leu Met Asp Trp Arg Asp Ser His Leu Gly Asn Asn Met Glu
 260 265 270
 Leu Lys Glu Arg Asn Arg Lys Val Pro Thr Phe Leu Tyr Ala Met Pro
 275 280 285
 Phe Ser Ser Asn Lys Ile Phe Leu Glu Glu Thr Ser Leu Val Ala Arg
 290 295 300
 Pro Gly Leu Arg Met Asp Asp Ile Gln Glu Arg Met Val Ala Arg Leu
 305 310 315 320

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<210> 60
<211> 511
<212> PRT
<213> Tagetes erecta
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Met Asp Thr Phe Leu Arg Thr Tyr Asn Ser Phe Glu Phe Val His Pro
1 5 10 15

Ser Asn Lys Phe Ala Gly Asn Leu Asn Asn Leu Asn Gln Leu Asn Gln
20 25 30

Ser Lys Ser Gln Phe Gln Asp Phe Arg Phe Gly Pro Lys Lys Ser Gln
35 40 45

Phe Lys Leu Gly Gln Lys Tyr Cys Val Lys Ala Ser Ser Ser Ala Leu
50 55 60

Leu Glu Leu Val Pro Glu Ile Lys Lys Glu Asn Leu Asp Phe Asp Leu
65 70 75 80

Pro	Met	Tyr	Asp	Pro	Ser	Arg	Asn	Val	Val	Val	Asp	Leu	Val	Val	Val	85	90	95
Gly	Gly	Gly	Pro	Ser	Gly	Leu	Ala	Val	Ala	Gln	Gln	Val	Ser	Glu	Ala	100	105	110
Gly	Leu	Thr	Val	Cys	Ser	Ile	Asp	Pro	Ser	Pro	Lys	Leu	Ile	Trp	Pro	115	120	125
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Asp	Cys	Leu	Asp	Thr	Thr	Trp	Ser	Ser	Ala	Val	Val	Tyr	Ile	Asp	Glu	145	150	155
Lys	Ser	Thr	Lys	Ser	Leu	Asn	Arg	Pro	Tyr	Ala	Arg	Val	Asn	Arg	Lys	165	170	175
Gln	Leu	Lys	Thr	Lys	Met	Leu	Gln	Lys	Cys	Ile	Ala	Asn	Gly	Val	Lys	180	185	190
Phe	His	Gln	Ala	Lys	Val	Ile	Lys	Val	Ile	His	Glu	Glu	Leu	Lys	Ser	195	200	205
Leu	Leu	Ile	Cys	Asn	Asp	Gly	Val	Thr	Ile	Gln	Ala	Thr	Leu	Val	Leu	210	215	220
Asp	Ala	Thr	Gly	Phe	Ser	Arg	Ser	Leu	Val	Gln	Tyr	Asp	Lys	Pro	Tyr	225	230	235
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His	Pro	Phe	Asp	Val	Asp	Lys	Met	Leu	Phe	Met	Asp	Trp	Arg	Asp	Ser	260	265	270
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Val	Leu	Pro	Gln	Arg	Val	Leu	Gly	Ile	Gly	Gly	Thr	Ala	Gly	Met	Val	355	360	365
His	Pro	Ser	Thr	Gly	Tyr	Met	Val	Ala	Arg	Thr	Leu	Ala	Ala	Ala	Pro	370	375	380

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